

## **CHAPTER 10**

# **Workshop Questions and Answers**

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## **Introduction**

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EPA conducted five two-day workshops from July through September 1997 in Chicago, IL, Atlanta, GA, Dallas, TX, Portland, OR, and Kansas City, MO to help facilitate understanding of the final PFPR rule. The information presented in the workshops mirrored the information presented in this P2 Guidance Manual. In addition, at each workshop, participants were able to walk through a P2 audit exercise and attend breakout sessions that presented more in-depth material on various key aspects of implementation of the rule. Most importantly, the workshops offered participants the opportunity to ask questions directly of EPA about the final PFPR rule.

This chapter includes questions that were asked at the five workshops and presents EPA's responses to these questions. EPA attempted to address all questions that were asked; some questions were consolidated because the same or very similar questions were asked at multiple workshops. The questions and answers are grouped by topic; a table of contents is included on the next page for ease of finding topics of interest.

## Contents

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<b>Applicability</b>	
General.....	105
Facility Operations.....	105
Pesticide Active Ingredients and Pesticide Products .....	108
PFPR Wastewater.....	113
<b>Zero Discharge</b>	
General.....	115
Potential to Discharge.....	117
<b>P2 Alternative</b>	
General.....	118
P2 Practices/Best Management Practices .....	118
Listed Modifications to P2 Practices .....	123
Nonlisted Modifications.....	123
P2 Audit.....	124
P2 Allowable Discharge .....	125
<b>Treatment/Treatability Issues</b>	
Wastewaters Requiring Treatment .....	126
Treatment Technology Operations .....	126
Determination of Treatment Equivalency .....	130
Treatability Testing.....	133
Sampling/Monitoring.....	134
EPA Test Methods .....	136
Determination of Sufficient Treatment .....	137
Well Operated Treatment Systems .....	141
<b>Compliance</b>	
Baseline Monitoring Report.....	141
P2 Alternative/Allowable Discharge.....	143
Necessary Paperwork .....	144
Permit/Control Mechanism Issues.....	148
Potential to Discharge.....	153
Compliance Time Line .....	154
<b>Other Questions .....</b>	<b>157</b>

## Applicability

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### General

How many facilities are covered under the scope of this rule? How many discharge wastewater?

EPA estimates that there are 2,631 facilities covered by the PFPR rule, 443 of which discharge wastewater.

### Facility Operations

How is toll formulating defined?

There is no regulatory definition of “toll formulating”. Toll formulators, as referred to by the PFPR rule, typically formulate, package, or repackage one or more products under contract to another registrant. The toll formulator does not own the registrations for these products. In addition, they may have multiple contracts of varying length with several different companies at the same time.

Registrants typically use toll formulators for one or more of the following reasons:

- The toll formulator has specialized equipment for the formulating or packaging of a product;
- The registrant does not have room at their facility to formulate, package, or repackage the product; or
- The registrant wishes to avoid potential cross contamination concerns by segregating incompatible products (e.g., herbicides and insecticides).

If an industry (i.e., a facility) formulates a product, but does not sell the product, is that operation covered?

Yes, if the operation meets the definition of formulation of an in-scope product/pesticide active ingredient, it is covered. It does not matter whether the facility sells that product or uses it internally. More specifically, the facility must have the potential to discharge in-scope process wastewater from PFPR operations to be covered by the rule.

Formulation pilot (i.e., R&D) facilities may also produce (for sale) formulations in smaller quantities until a contract/toll formulating arrangement can be established. Since these pilot facilities change over frequently and have a small portion of commingled wastewater from formulating operations, are they covered under the PFPR regulation? If so, can a control authority grant a waiver to this type of facility?

Research and development facilities are not covered by the PFPR rule. In addition, these facilities cannot *sell* unregistered experimental pesticide products in the United States without an Experimental Use Permit (EUP) granted by EPA. Therefore, if the facility is producing a formulation for “sale” under a EUP for that product, the facility is still performing R&D activities, which would not be covered under the PFPR rule. However, if the facility is producing an in-scope formulation for sale in the U.S. as a registered product (or outside the U.S. without registration), these formulation activities would be covered under the PFPR rule.

**Why are R&D laboratories and operations exempted from the rule? These operations, due to the use of new compounds and formulations, appear to be *potentially* more dangerous polluters than PFPR operations that have existing controls, especially since the volume of wastewater generated does not necessarily increase or decrease the pollutant load.**

In general, research and development activities at PFPR facilities do not generate the same wastewater volumes or pollutant loads that are found in manufacturing R&D facilities. They are generally very small operations that develop a new pesticide product or a new formulation (e.g., concentrate, solution ready-to-use, microencapsulated) of an existing product. They cannot store and reuse rinsates for two main reasons: experimental controls and they only make the product one time or in one set of trials.

In addition, in a large number of effluent guidelines, including the Pesticide Chemicals Manufacturing Point Source Category, R&D activities are not covered by the rule and can be regulated on a best professional judgement BPJ basis.

**Whose responsibility is it to dispose of wastewater generated by contract packagers? For example, a company formulates a dry granular product containing atrazine and sends it to another company to package.**

It is the responsibility of the facility that performs the covered activity to comply with this rule, including all paperwork requirements. Using the example in the question, the packager would be required to comply for all in-scope wastewaters generated during or associated with their packaging operation.

**Is repackaging of pesticide active ingredients as both pesticide and nonpesticide products covered under the PFPR standards no matter what the product?**

No, only products that are pesticides and that meet the applicability of the PFPR rule are covered by the standards. Non-pesticide products that may contain the same active ingredients are not covered by the rule.

**If a facility repackages a pesticide active ingredient in a container for ultimate sale, are they covered under Subcategory C or Subcategory E?**

This answer assumes that the product is not exempt from the PFPR rule. If the product that is repackaged is an agricultural pesticide product *and* is packaged in a refillable container *and* the facility is not performing other pesticide formulating or packaging operations, then the production is covered under Subcategory E. Otherwise, the production is covered under Subcategory C.

**Are farm cooperatives that supply products to farmers covered by Subcategory E regulations?**

Yes, if those cooperatives formulate, package, or repackage pesticide products that are covered by the scope of the rule, and discharge or have the potential to discharge the resulting wastewater. Many farm cooperatives package pesticides from bulk into smaller minibulk (refillable) containers that are delivered to the end user (i.e., the farmer). The water used to clean/rinse these minibulk containers is a covered wastewater under the rule (Subpart E).

**Are farmers who repackage pesticide products into smaller containers for delivery to parts of the farm covered by Subcategory E regulations?**

No. End users of the pesticide products are not covered by either Subcategory C or E regulations.

**Are applicators covered by this rule?**

In general, no. Wastewater generated from application of pesticide products is not covered. Therefore, if the only operation is application of the pesticide, they are not covered by the rule (applicators are the end user). However, if they also formulate, package, or repackage products, the wastewater from the formulation, packaging, and repackaging operation is covered.

**Is an applicator formulating a product for its own use covered under this rule?**

If the product is a registered FIFRA pesticide product or meets the definition of making a pesticidal claim rule (see page 57549, §455.40 of the preamble to the final rule in Appendix A for a discussion of pesticidal claim, as well as 40 CFR 152.8, 152.10, and 152.15) *AND* is being formulated as a manufacturing or end use product (§455.10(i)) for use in the U.S. and is not exempt from the PFPR rule, then the wastewater from formulation is covered by the rule. However, the wastewater from application services is *not* covered by the rule.

**Are aerial applicators/crop dusters covered by this rule?**

No, wastewaters related to custom application services are not covered by this rule (see 40 CFR 455.60(b)).

**Less than 0.25% of a facility's operation is the repackaging of pesticides. Is the facility covered by the rule?**

Yes, the wastewater from such in-scope repackaging operations is covered if the facility discharges or has the potential to discharge process wastewater from their repackaging operations. There is no *de minimis* production exemption.

**Do all pesticide active ingredient drums require rinsing?**

The PFPR rule does not require rinsing of any drums or equipment, although other regulations (e.g., 40 CFR 165.9 in FIFRA or 40 CFR 261.7(b)(3)) may require specific rinsing procedures for certain drums containing pesticide active ingredients or certain hazardous wastes. However, if a facility rinses these drums, the wastewater generated is subject to the PFPR rule.

**Is wastewater from remedial actions (e.g., groundwater remediation operations) occurring at a current or former PFPR facility covered by these categorical standards?**

No, wastewater from remedial actions does not meet the definition of process wastewater. However, any treatment standards for the discharge of such wastewaters that may be established through a remedial process may take into account the PFPR regulation.

**If a facility blends a pesticide product with something else (e.g., grass or fertilizer), is that production covered by the rule?**

Yes, unless the operation is considered a custom blending operation, as defined in 40 CFR 167.3.

**Are facilities required to rinse inert drums?**

No. The rinsing of drums containing pesticide active ingredients or inerts or other raw materials is not required by the PFPR rule. However, if a facility does rinse their drums, the wastewater generated by those rinsing operations is covered by the rule.

Note that FIFRA (40 CFR 165.9(b)) requires that Group II containers (noncombustible containers which formerly contained

organic or metallo-organic pesticides, except organic mercury, lead, cadmium, or arsenic compounds) should first be triple-rinsed before reuse or disposal. Also, there are certain RCRA regulations which require rinsing of containers that have held certain types of hazardous waste (40 CFR 261.7(b)(3)).

## **Pesticide Active Ingredients and Pesticide Products**

**Is “Neem Oil,” an active ingredient similar in application to citronella, covered by the rule?**

EPA excluded two groups of chemical mixtures from the final rule. The first group is defined at 40 CFR Part 455.10 (j) as “any product whose only pesticidal active ingredient(s) is: a common food/food constituent or nontoxic household item; or is a substance that is generally recognized as safe (GRAS) by the Food and Drug Administration (21 CFR 170.30, 182, 184, and 186) in accordance with good manufacturing practices, as defined by 21 CFR Part 182; or is exempt from FIFRA under 40 CFR 152.25.” EPA believes that citronella is exempt from the PFPR rule as a Group I mixture. Neem oil is an oil extract from the seed kernels of the Indian Neem tree. If neem oil also meets the Group I mixture definition, it is also excluded from the rule.

EPA also excluded a second group of chemical mixtures, but did not develop a definition for this group. The Group 2 mixtures are listed in Table 9 to Part 455; however, because Neem Oil is not listed there, it is not excluded as a Group 2 mixture.

**Are Group I chemicals exempted because they are exempted from FIFRA?**

Some of the Group 1 chemicals are exempted from certain FIFRA reporting and registration requirements under 40 CFR 152.25; however, Group 1 mixtures also include products whose only pesticide active ingredients are chemicals that are common food/food constituents or nontoxic household items or substances generally recognized as safe (GRAS) by the Food and Drug Administration (21 CFR 170.30, 182, 184, and 186) in accordance with good manufacturing practices, as defined by 21 CFR Part 182.

**Are pool chemicals exempt from the rule?**

Yes. Pool chemicals (as defined in 40 CFR 455.10(q)) are exempt from this rule (40 CFR 455.40(d)).

**Please clarify the sanitizer exemption, specifically for those products that are considered sanitizers, but are not exempted from the PFPR rule by the sanitizer exemption.**

The exempted sanitizer products, as defined in section 455.10, are “pesticide products that are intended to disinfect or sanitize, reducing or mitigating growth or development of micro-biological organisms including bacteria, fungi, or viruses on inanimate surfaces in the household, institutional, and/or commercial environment and whose labeled directions for use result in the product being discharged to . . . POTWs. This definition shall also include sanitizer solutions as defined by 21 CFR 178.1010 and pool chemicals as defined in section 455.10(q). This definition does not include liquid chemical sterilants (including sporicidals) exempted by section 455.40(f) or

otherwise, industrial preservatives, and water treatment microbiocides other than pool chemicals.”

In other words, sanitizers, as defined (and including pool chemicals), are exempt from the rule when their labelled directions for *use* (not disposal) result in discharge to POTWs. The rule still covers certain liquid chemical sterilants, industrial preservatives, and water treatment microbiocides other than pool chemicals (e.g., cooling tower or boiler treatment microbiocides). If one product is registered for use as a sanitizer, pool, *and* cooling tower product, is it exempt from the rule?

In general, EPA intends to cover cooling tower biocides under this rule. However, if one product recipe (i.e., registered formulation) has the multiple uses listed above (meaning the chemical is used in the same concentration (percent active ingredient) in both sanitizer and cooling tower uses), the registrant can request their Regional Office or EPA’s Office of Water to determine whether the wastewater resulting from the formulation, packaging, or repackaging of such a product is exempt from this rule. EPA has determined that sodium hypochlorite is not subject to the PFPR guideline. Contact information is provided in Chapter 9 of this guidance manual.

**Does chlorine gas meet the definition for exemption as an inorganic wastewater treatment chemical?**

Chlorine gas is exempt from the final PFPR rule if it is used in wastewater treatment operations.

**Why is EPA interested in tracking inert materials in a P2 audit? Are inert materials covered under the PFPR regulation?**

Inert materials are covered in discharges from PFPR operations if they are also priority pollutants. However, the reason EPA suggests tracking inert materials during the P2 audit is to identify possible contaminants in wastewater that will require treatment prior to discharge or to identify characteristics that may hinder effective treatment of pesticide active ingredients or priority pollutants.

**What kind of treatment is required for inert materials?**

The PFPR rule requires treatment of pesticide active ingredients and priority pollutants. No specific treatment technology has been listed for inert materials, although activated carbon is effective for many organic priority pollutants.

**Are fertilizers covered by the rule?**

No.

**If a pesticide active ingredient that a facility uses is not listed in Table 10, does that mean it is not covered by this rule or it does not require treatment?**

No. Table 10 is *not* a list of all covered pesticide active ingredients; it was developed to aid facilities, permit writers, and control authorities in identifying appropriate treatment technologies for existing pesticide active ingredients. In order to determine whether your pesticide active ingredient is covered by the rule, you must review the rule applicability statements



	<p>found in III.A (page 57523) of the final rule, located in Appendix A of this guidance manual.</p> <p>In order to determine the appropriate treatment technology for pesticide active ingredients not listed in Table 10, the facility and control/permitting authority must use best professional judgement (BPJ).</p>
<p><b>If a facility adds a biocide to their product (e.g., adhesives), is it covered under the rule?</b></p>	<p>If the facility claims that the final product has pesticidal qualities (because of the addition of the biocide), the product would be covered by the PFPR rule.</p> <p>If the facility adds the biocide as a preservative (to protect the quality of their product), and therefore is the <i>end user</i> of the biocide, then the product is <i>not</i> covered under the PFPR rule.</p>
<p><b>As new pesticide active ingredients come on the market, how does one determine if they are covered by this rule or whether they require treatment?</b></p>	<p>If the pesticide active ingredient or product is a pesticide as defined in FIFRA regulations (i.e., there is a pesticidal claim made regarding that pesticide active ingredient or product) and the pesticide active ingredient/product will be formulated, packaged, or repackaged into a pesticide product that is not exempted from the rule, then the pesticide active ingredient/product is covered by this rule (see page 57549, §455.40 of the preamble to the final rule in Appendix A for a discussion of pesticidal claim, as well as 40 CFR 152.8, 152.10, and 152.15). Also, the facility must have the potential to discharge wastewater associated with in-scope PFPR production to be covered by these PFPR effluent guidelines.</p> <p>If wastewater containing a new pesticide active ingredient is covered under the rule, treatment technologies can be determined by identifying the technology for a pesticide active ingredient with a similar chemical structure or through treatability testing.</p>
<p><b>If certain chemicals (e.g., zinc, copper) are used for both pesticide and nonpesticide products, is the facility covered under the PFPR categorical standards only when they blend these items with inert materials to produce a product specifically marketed as a pesticide product?</b></p>	<p>The PFPR rule covers the formulating, packaging, and repackaging of pesticide products that meet the applicability of the PFPR rule. Nonpesticide products that may contain the same active ingredients are not covered by the rule. See Chapter 1 of this document for definitions of formulating, packaging, and repackaging.</p>
<p><b>Does the PFPR rule apply to herbicide growth regulators and surfactants that may contain toxic chemicals?</b></p>	<p>The PFPR rule applies to all pesticide products that are formulated, packaged, or repackaged and are not specifically exempted from the rule. FIFRA regulations provide the following definitions for pesticide and pesticide product (40 CFR 152.3), as well as pest (40 CFR 152.5):</p> <p><b>Pesticide</b> means any substance or mixture of substances intended for preventing, destroying, repelling, or mitigating any</p>



pest, or intended for use as a plant regulator, defoliant, or desiccant, other than any article that:

- (1) Is a new animal drug under FFDCA Sec. 201(w), or
- (2) Is an animal drug that has been determined by regulation of the Secretary of Health and Human Services not to be a new animal drug, or
- (3) Is an animal feed under FFDCA Sec. 201(x) that bears or contains any substances described by paragraph (s)(1) or (2) of this section.

**Pesticide product** means a pesticide in the particular form (including composition, packaging, and labeling) in which the pesticide is, or is intended to be, distributed or sold. The term includes any physical apparatus used to deliver or apply the pesticide if distributed or sold with the pesticide.

**Pest** means an organism is declared to be a pest under circumstances that make it deleterious to man or the environment, if it is:

- (a) Any vertebrate animal other than man;
- (b) Any invertebrate animal, including but not limited to, any insect, other arthropod, nematode, or mollusk such as a slug and snail, but excluding any internal parasite of living man or other living animals;
- (c) Any plant growing where not wanted, including any moss, alga, liverwort, or other plant of any higher order, and any plant part such as a root; or
- (d) Any fungus, bacterium, virus, or other microorganisms, except for those on or in living man or other living animals and those on or in processed food or processed animal feed, beverages, drugs (as defined in FFDCA sec. 201(g)(1)) and cosmetics (as defined in FFDCA sec. 201(i)).

Growth regulators are considered pesticides as defined in the FIFRA regulations. Therefore, the in-scope wastewater associated with the PFPR of growth regulators would be covered by the PFPR rule. Surfactants are generally inert, not active, ingredients of the pesticide product; therefore, when formulated into a pesticide product as an inert material, the surfactant isn't specifically covered, but wastewater associated with the PFPR of the pesticide product (which contains the surfactant) would be covered, as long as the pesticide active ingredient (or the product as a whole) is not exempt from the regulation.

**If a chemical can be shown not to pass through a publicly owned treatment works (POTW), can that chemical be exempt from the PFPR rule?**

The P2 alternative allows some amount of discharge when a facility is following certain P2 practices set out by this rule and is performing treatment where required by the rule, even if the chemical is deemed to pass through. A facility can perhaps also obtain removal credits from the POTW/control authority for

a particular chemical (see page 57547 of the preamble to the final PFPR rule in Appendix A). Basically, once compliance with 40 CFR Part 403.7 (removal credit regulations) is shown and removal credit authority is granted, the control authority can remove the requirement for pretreatment of the pollutants that remain in a PFPR facility's wastewater discharge after all applicable P2 practices have been implemented and those pollutants can be demonstrated to neither pass through nor interfere with the operation of the POTW (in accordance with 40 CFR 403 provisions). The PFPR industrial user would also have to continue to comply with the pollution prevention practices as specified in the P2 alternative even if a removal credit has been provided. Note that four organic chemicals considered to be priority pollutants (phenol, 2-chlorophenol, 2,4-dichlorophenol, and 2,4-dimethyl phenol) are already excluded from pretreatment standards of this regulation because they do not pass through a POTW.

**How does a facility demonstrate that a pesticide active ingredient does *not* pass through the POTW?**

As defined at 40 CFR 403.3, pass-through occurs when a POTW violates their NPDES permit. Pass-through of pesticide active ingredients cannot be shown in this manner unless the POTW has limits for specific pesticide active ingredients or has whole effluent toxicity limits (and a toxicity event can be tied to one or more pesticide active ingredients).

The POTW can also make a separate determination whether pesticide active ingredients that are discharged from industrial users are pollutants that could potentially pass through. In this analysis, the POTW measures the level of pesticide active ingredient in both the POTW's influent and effluent. The pesticide active ingredient must be detected in the influent to determine whether pass through occurs. In addition, the POTW can decide whether the presence of the pesticide active ingredient adversely impacts the POTW's treatment operations. If the POTW determines that the pesticide active ingredient either passes through or adversely impacts operations, local limitations may be assigned.

**What about the pesticide active ingredient limits that were developed for regulation of the pesticide manufacturing industry (58 FR 50637)?**

The limitations developed for the pesticide manufacturing industry covered a much smaller scope of chemicals than the PFPR rule. In addition, the mass-based limitations for the manufacturing industry were developed based on the variability of their wastewaters. PFPR wastewaters can be more variable than pesticide manufacturing wastewaters; therefore, in some cases, it may not be appropriate to transfer the limitation to the PFPR industry. However, it may be possible and desirable for a pesticide manufacturer to receive an additional allowance in their discharge for their PFPR wastewater by applying the pesticide manufacturing limits to the additional production associated with PFPR operations after the facility has incorporated the listed P2 practices into their PFPR operations.

## PFPR Wastewater

What is the difference between drum rinsates and interior equipment rinsates and their respective P2 practices?

Both are defined as interior wastewater sources (which require treatment prior to discharge); however, they are different sources. Drum rinsates are generated from the cleaning of raw material drums and can typically be used *immediately* in the product formulation. Drum cleaning also includes the cleaning of shipping containers that may be returned to the shipping facility. The listed P2 practices for drum rinsing include direct reuse, storage and reuse, or use of a countercurrent drum rinsing station.

Interior equipment cleaning rinsates are generated from the cleaning of equipment used to formulate, package, or repack-age products *following* the formulation, packaging, or repack-aging of the product. Therefore, facilities are more likely to store these rinsates for reuse in the next formulation of the same or compatible product. The listed P2 practice for interior equipment rinsates is storage and reuse.

Does formulating equipment interior cleaning include the cleaning of piping and hosing, too?

Yes.

What if a facility produces a water-based product followed by a solvent-based product? The facility cleans the equipment with water, followed by *alcohol*, prior to formulating the solvent-based product. Is the alcohol rinse covered by the PFPR rule? Since the water picked up in the alcohol rinse evaporates, is there anything to preclude reusing the alcohol continuously?

There is nothing to preclude reusing the alcohol continuously, and achieving zero discharge for this cleaning operation. If the facility is not able to reuse the alcohol for some reason, they may choose to dispose of it. In that case, the alcohol rinse is not considered a wastewater covered by the PFPR rule, but would be subject to applicable solvent disposal regulations. However, the P2 alternative encourages facilities to segregate their solvent-based and water-based production to avoid the generation of non-reusable rinsates requiring disposal.

Are cleaning waters from a bulk tank that contains a material used in both pesticide and nonpesticide products covered under this rule?

Yes. The intent of the rule is to cover wastewater associated with pesticide production; therefore, cleaning rinsates of a bulk tank containing a material used in PFPR production would be covered under the PFPR rule.

If the facility has more than one bulk storage tank for a particular material, and can specify that only material from certain tanks are used in PFPR production, then only the rinsate from those tanks is covered under the PFPR rule; however, if the facility cannot make this distinction, then rinsate from all tanks containing that material is covered by the rule.

Do DOT test bath waters require treatment?

No; however, under the P2 alternative, DOT test bath water from continuous overflow baths must include some recircula-

	tion or be a batch bath. Otherwise, they must meet zero discharge.
<b>If a facility manufactures a pesticide active ingredient and formulates a product with the same pesticide active ingredient, is the laboratory exemption only applicable to the PFPR laboratory wastewater?</b>	Yes.
<b>If a facility only has safety showers and eye washes, is it within the scope of the regulation? If so, what are the implications of this rule?</b>	Determining whether the facility is within the scope of the regulation depends on whether they have a potential to discharge process wastewater. EPA's Pretreatment Bulletin #13 (see Appendix E) states that it is possible to discharge non-covered wastewater streams, in this case safety showers and eye washes, in such a way that there is no potential for the facility to also discharge process wastewater. However, if the noncovered wastewater sources are located in an area (e.g., a formulating area), where it is possible for the noncovered wastewater discharge to become contaminated with process wastewater, then the facility has a potential to discharge and is within the scope of the regulation. Documentation that would be required would depend on the facility's potential to discharge.
<b>Are wastewaters associated with the cleaning of coveralls covered by the rule?</b>	On-site laundry operations are not covered under the scope of this rule.
<b>Are water emissions from research and development pilot plant operations exempt from the rule?</b>	Yes. See 40 CFR 455.40(e) of the final rule.
<b>Is storm water completely exempt from regulation? What about contaminated storm water from diked areas?</b>	Storm water is exempt from coverage under the final PFPR rule (61 FR 57524), and therefore is not subject to the P2 practices and treatment requirements of that rule. However, a facility's storm water discharges <i>are</i> covered under Phases I or II of the General Storm Water Regulations (61 FR 57524).
<b>Assume a facility stores all rinsates in an outdoor storage tank. Are leaks and spills from that tank covered, since storm water is not covered?</b>	Leaks and spills are covered by this rule. All leaks and spills must be cleaned up in a timely fashion, as discussed in P2 alternative practice #2 (61 FR 57553). Leaks and spills in outdoor storage tanks should be cleaned up prior to storm events; the resulting storm water is not covered by the rule.

## Zero Discharge (see also Compliance—Potential to Discharge)

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### General

**Does EPA have guidance on the PFPR rule available for zero discharge facilities? Are zero dischargers covered by the rule?**

The legal basis of this rule (i.e., the basis used to determine whether a facility is covered by the rule) is the *potential* to discharge process wastewater pollutants. A PFPR facility is a categorical industrial user (CIU) and is subject to the PFPR regulations of “no discharge of wastewater pollutants” (or the P2 alternative) when there is a potential to discharge any PFPR process wastewater covered by the PFPR regulation. If a facility has no potential to adversely affect a POTW’s operation or violate any pretreatment standard or requirement due to accidental spills, operational problems, or other causes so that no regulated process wastewater can reach the POTW, then the facility is not covered under the PFPR rule and it is not legally required at the Federal level for these facilities to submit paperwork (i.e., BMR). In addition, if the only wastewater that a PFPR facility discharges (or has the potential to discharge) is not a regulated process wastewater under the PFPR effluent guidelines (e.g., sanitary wastewater, employee showers, laundry water), then the PFPR facility is not covered by the PFPR effluent guidelines and the facility is not a CIU for that discharge for purposes of 40 CFR Part 403 (General Pretreatment Standards).

Facilities that are meeting zero discharge, but do have the potential to discharge, are covered by the rule. However, they are currently in compliance with the zero discharge portion of the rule. These facilities must submit all paperwork required by the rule for facilities that choose to comply with zero discharge, including a BMR.

A PFPR facility that employs 100% recycle or claims no discharge of regulated PFPR process wastewater should be thoroughly evaluated through an on-site inspection to determine if there is any reasonable potential for adversely affecting the POTW’s operation or for violating any pretreatment standard or requirement due to accidental spills, operational problems, or other causes. If the control authority concludes that no regulated process wastewater can reach the POTW (i.e., there is no potential to discharge), and therefore the PFPR facility has no reasonable potential for adversely affecting the POTW’s operation or for violating the PFPR effluent guidelines, then the PFPR effluent guidelines are not applicable to that PFPR facility.

However, EPA Pretreatment Bulletin #13 (see Appendix E) suggests that the control authority issue an individual control mechanism containing the following conditions:

- No discharge of process wastewater is permitted;
- Requirements to notify the POTW of any changes in operation resulting in a potential for discharge;
- Requirements to certify semiannually that no discharge has occurred;
- Notice that the POTW may inspect the facility as necessary to assess and assure compliance with the “no discharge” requirement; and
- Requirements to comply with Resource Conservation and Recovery Act (RCRA) and state hazardous waste regulations regarding the proper disposal of hazardous waste.

**Can a facility comply with zero discharge by showing pollutant levels below detection limits (for pesticide active ingredients and/or priority pollutants) in their effluent? If so, what kind of implications are there for enforcement (e.g., what happens if on occasion a facility discharges a pollutant above the detection limit)?**

A facility may comply with zero discharge by demonstrating that all pesticide active ingredients and priority pollutants are below their method detection limits in the facility’s final effluent, and only if all pollutants have approved analytical methods. A detection of any of these pollutants means the facility is out of compliance with the rule.

**Why is zero discharge defined as “no discharge of process wastewater pollutants”?**

Section 301 of the Clean Water Act prohibits the discharge of “any pollutant” except if the discharge of such pollutant is in compliance with a permit. Because it is impossible to achieve an analytical detection of “zero” for a pollutant, facilities are allowed to show compliance with zero discharge if each process wastewater pollutant (e.g., the specific pesticide active ingredient) is not analytically detected in the effluent. Another way to show zero discharge is to show no flow of process wastewater from the facility.

**Does “no discharge of process wastewater pollutants” refer only to the pesticide active ingredients and priority pollutants?**

In the PFPR rule, “no discharge of process wastewater pollutants” refers only to pesticide active ingredients and priority pollutants associated with in-scope pesticide products from in-scope wastewater sources. However, there may also be local limitations on additional pollutants.

**Does a facility need to say they are implementing the P2 alternative if they totally reuse their wastewater, or if they do not generate wastewater because they use a solvent to rinse equipment?**

A facility that completely reuses all PFPR wastewater (including floor wash, leak and spill cleanup, etc.) meets the definition of zero discharge and does not need to claim they are meeting the requirements of the P2 alternative. However, even though the facility is meeting zero discharge, they still have the choice to say they are complying with the zero discharge requirement (which has minor paperwork requirements) or the P2 alternative (which has more comprehensive paperwork requirements, but may give the facility more flexibility if they decide to discharge in the future).



**If a company has two facilities 150 miles apart, can wash water from one facility be transported to the other facility and used as make-up water?**

If the facility only generates spent solvent and generates *no* wastewater (including floor wash, leaks and spills, etc.), then the facility has no potential to discharge and is not covered by the PFPR rule (see Appendix E for a definition of “potential to discharge”).

## Potential to Discharge

**Is a facility that currently has a potential to discharge PFPR regulated wastewater sources, but does not discharge, a new or existing source?**

The facility is an existing source.

**If a facility has safety showers and/or eye wash stations, does that constitute “potential to discharge”?**

No. “Potential to discharge” only applies to regulated (i.e., in-scope) wastewater sources. As discussed earlier, if the only wastewater that a PFPR facility discharges (or has the potential to discharge) is not a regulated process wastewater under the PFPR effluent guidelines (e.g., sanitary wastewater, employee showers, laundry water), then the PFPR facility is not covered by the PFPR effluent guidelines.

**Does a facility with permanently plugged drains in the PFPR process areas have a “potential to discharge”?**

No. There is no potential to discharge from the process area. If a facility has no potential to adversely affect a POTW’s operation or violate any pretreatment standard or requirement due to accidental spills, operational problems, or other causes so that no regulated process wastewater can reach the POTW, then the facility is not covered under the PFPR rule.

**How can a facility that uses water have *no* potential to discharge if there is a connection on site to the POTW?**

The determination of “no potential” relates only to regulated process wastewater sources that are addressed in the PFPR rule. Therefore, a facility may have a connection to a POTW and may use water, but still have no “potential to discharge” if the control authority concludes that there are no regulated process wastewater sources that can reach the POTW and therefore, the industrial user has no reasonable potential for adversely affecting the POTW’s operation or for violating any pretreatment standard or requirement.

## P2 Alternative

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### General

What is the difference between listing a preliminary compliance decision as “P2 alternative” versus “P2 alternative with modification” in Table C of the P2 Audit?

Listing “P2 alternative” means that the facility will follow the P2 practices listed in Table 8 of the final rule for that wastewater source without utilizing any of the listed (or nonlisted) modifications. For example, if a facility generates an interior equipment cleaning rinsate, they will store and reuse the rinsate in their PFPR operations.

Listing “P2 alternative with modification” means that the facility is claiming a modification (listed or nonlisted) to a Table 8 P2 practice, meaning they have a good justification to not conduct that specific practice. For example, if a facility generates an interior equipment cleaning rinsate, but has documented that biological growth occurs when they store the rinsate for that product, they could claim a listed modification to release them from the requirement to reuse that rinsate in their PFPR operations. However, the facility would still need to treat this rinsate prior to discharge to the receiving stream or POTW.

If an indirect discharger disposes of interior wastewaters, leak/spill water, and floor wash water off site, can other PFPR process wastewaters be discharged to the POTW without implementing P2 practices?

No. The reasoning behind allowing a discharge under the P2 alternative is to encourage greater use of the P2 practices. Therefore, certain general practices, such as water conservation, would still need to be implemented even though other P2 practices, such as the recycle of interior wastewater, would not be applicable if interior wastewaters were disposed of off site. However, if the facility was implementing P2 practices and disposing interior wastewaters, leak/spill water, and floor wash water off site, the facility could discharge the remaining PFPR process wastewater sources to a POTW without prior treatment.

### P2 Practices/Best Management Practices

How does EPA define triple rinsing of equipment?

EPA defines triple rinsing in 40 CFR 165.1 (Regulations for the Acceptance of Certain Pesticides and Recommended Procedures for the Disposal and Storage of Pesticides and Pesticides Containers), as follows:

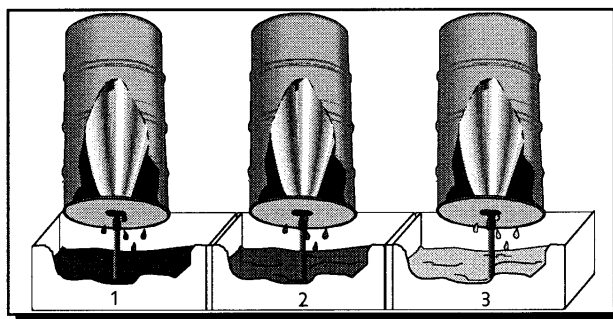
“Triple rinse means the flushing of containers three times, each time using a volume of the normal diluent equal to approximately ten percent of the container’s capacity, and adding the rinse liquid to the spray mixture or disposing of it by a method prescribed for disposing of the pesticide.”

The Container regulation also allows for an equivalent pressure rinse. Note that the final PFPR rule does not require triple

rinsing as part of the P2 alternative, but when PFPR-related equipment is triple rinsed/pressure rinsed, the wastewater generated would be covered by the P2 alternative if it is generated from in-scope PFPR production and wastewater sources.

**Why is the drum rinsing station referred to as countercurrent rinsing?**

The drum rinsing station is not *true* countercurrent rinsing; however, it is operated in a countercurrent fashion, where the drums are moved from station 1 to 2 to 3 and the water is moved from Station 3 to 2 to 1, where station 1 contains the most concentrated rinse and station 3 contains the least concentrated rinse. When station 1 becomes too contaminated to effectively rinse drums, fresh water is used to replace it, and station 1 becomes station 3, station 3 becomes station 2, and station 2 becomes station 1.



**Why didn't EPA include the operation of a countercurrent drum rinsing station that uses solvent in the list of P2 practices?**

Drum rinsing stations allow for the recycle (as opposed to reuse) of drum rinsates (note: discharge from drum rinsing stations must be treated prior to discharge). EPA did not specifically list the use of countercurrent drum rinsing stations for solvent-containing drums because it is not common in the industry; however, a facility could seek an unlisted modification for this practice.

**Instead of using drip pans, can a facility operate a general sump in their compounding area?**

A facility can operate a general sump in the compounding area as part of the P2 alternative if they can demonstrate that they are reusing the water collected in the sump. The intent of this P2 practice is to reuse the collected drips and spills, or, at a minimum, to prevent concentrated leaks and spills from increasing the pollutant loading in the floor wash water. The facility would need to request a nonlisted modification and receive approval for that modification from the permitting/control authority. If the water is not being reused, the facility would need to provide justification as to why drip pans could not be used.

**Does a facility have to use drip pans, or could they use some other method of collecting drips and spills (e.g., hard pipe, welded flanges, etc.)?**

The facility could implement another practice, although they would need to request a nonlisted modification. In addition, the facility must show that the alternate method would adequately prevent leaks and drips from occurring or would allow reuse of the material (see above).

**Do facilities that operate wet air pollution control scrubbers discharge that wastewater?**

Yes, facilities that operate these devices typically discharge a blowdown stream from the scrubber periodically. Some facilities may also operate these devices with a continuous discharge. Often, these facilities treat the scrubber water prior to discharge to the POTW or receiving stream. Note: Under the P2 alternative, facilities must employ some recirculation of water used in air pollution control scrubbers.

**Can you store and reuse material for greater than 90 or 180 days?**

If you are storing hazardous or characteristic material (e.g., rinsate) on site *for reuse*, it is not considered *waste* and therefore is not covered by the 90- and 180-day storage limitation. However, the RCRA regulations require that materials being stored for reuse not be accumulated speculatively. Material not considered speculatively accumulated includes material that is shown to be recyclable, to have a feasible means of being recycled, and, that during the calendar year, the amount of material recycled equals at least 75% by weight or volume of the amount of that material accumulated at the beginning of the period. This discussion is included on page 57529 of the preamble to the final rule in Appendix A.

**Many inerts at a facility are also used in nonregistered products. How is it determined which inert drum rinsates are covered by the PFPR regulations?**

It is the intent of the rule to cover wastewater associated with pesticide production; therefore, cleaning rinsates of drums containing inert materials used in PFPR production would be covered under the PFPR rule. Many facilities are able to separate pesticide and nonpesticide operations. Therefore, if the facility can specify that only material from certain drums are used in PFPR production, then only the rinsate from those drums is covered under the PFPR rule. If the facility cannot make this distinction, then rinsate from all drums containing that material is covered by the rule. Note: Not all drums will need to be rinsed. Many inert containing drums hold chemicals that do not trigger the rinsing requirements under FIFRA or RCRA.

A facility may be able to request a nonlisted modification if they are unable to reuse all inert drum rinsate; however, they must show good justification as to why they cannot reuse it, as well as demonstrating reuse of some of the rinsate in their PFPR process.

**If a facility uses equipment to produce both solvent- and water-based products, at what point after solvent rinsing is the final water rinse considered “clean” enough (i.e., no longer containing detectable quantities of pesticide active ingredient)?**

**Does a facility have to reuse rinsates from the cleaning of refillable containers? These containers may contain impurities, which precludes the reuse of the rinsate in the product formulation because of quality control concerns.**

**If the shipping containers/drums are metal, they may not need to be rinsed since refurbishers have a flame to clean drums.**

**A facility performs the first two rinses of their pesticide active ingredient raw material drums with a solvent compatible with the formulation. The third rinse uses a water/detergent blend to remove the solvent. This water/detergent blend cannot be used in the formulation or in any formulation at the facility. Is the water/detergent rinse eligible for treatment and discharge under the P2 alternative, or must it meet zero discharge (through off-site disposal)?**

**What does a facility do with solvent used to rinse tanks, since they will not be able to reuse the solvent forever?**

Practice 9 (listed in Table 8) states that facilities must dedicate PFPR production equipment to water-based versus solvent-based products. This practice is intended to eliminate the generation of solvent-contaminated wastewater, which are typically unable to be reused in PFPR operations. By dedicating production equipment, facilities may reuse solvent rinses and water rinses into solvent-based and water-based formulations, respectively.

Facilities may also discuss incorporating a listed modification (i.e., operation of a solvent recovery system) or nonlisted modification to this practice with their control/permitting authority.

Under the P2 alternative (for Subcategory C facilities), reusing rinsates from the cleaning of refillable containers would be required unless the facility requested a modification. Although the stated reason for not reusing the rinsate is not a listed modification, a facility could request a nonlisted modification if they are also able to supply sufficient documentation of the quality control issue.

The P2 alternative is not available to refilling establishments (Subcategory E facilities); therefore, facilities are not required to reuse rinsates. However, these facilities must achieve zero discharge of all PFPR process wastewaters.

Drums may be metal, fiber, or plastic. The PFPR rule does not require rinsing of drums; however, if drums are rinsed, the drum rinsate is a covered wastewater source and is subject to the P2 alternative.

If the facility must use the water/detergent blend for the final rinse because a drum refurbisher requires such cleaning before accepting the drums, the facility can meet the P2 alternative by using the listed modification for Practice 8 [“REFURB”]. However, if the facility is not required by a drum refurbisher/recycler to rinse the drums in this manner, the facility must either meet zero discharge for the final rinse or request a nonlisted modification from their control authority/permitter to allow treatment and discharge under the P2 alternative. The facility could also use a drum rinsing station for the water/detergent rinsing step, which would allow for recycle of the water/detergent rinsate to clean a large number of drums.

For solvent rinses associated with drum rinsing or interior equipment cleaning rinsing operations, it is expected that, under the P2 alternative, a facility will reuse the solvent into the formulated product (or, at a minimum, they will segregate their

**Has EPA looked at any of the “clean laboratory practices”? Are they required for this rule and, if so, how does that affect compliance with this rule?**

solvent rinsates from their water rinsates). If the facility is not able to completely reuse their solvent rinses in this manner, they must dispose of the solvent in accordance with appropriate disposal regulations; however, the PFPR rule only covers *wastewater* discharges (not solid or hazardous waste disposal operations).

The words “clean,” “ultra-clean,” “clean techniques,” “clean laboratory practices,” and other words and phrases have been used to describe additional steps taken to preclude contamination during sampling and analysis of trace metals. These techniques are not required for effluent monitoring. However, EPA has been made aware that for some metals (e.g., zinc) it may be prudent to apply some of these clean techniques in effluent monitoring to assure that results are reliable and are not the result of contamination.

This rule does not specifically require analytical testing, but testing may be necessary to show that the facility’s treatment system is “well operated and maintained,” as discussed in 40 CFR 455.41(c)(5) [page 57550 of the preamble to the final rule, located in Appendix A of this guidance manual].

**The PFPR rule states that disposing of wastewater at a RCRA incinerator complies with “zero discharge.” In addition, incinerator scrubber water is not considered a process wastewater. Therefore, can a facility receive BPJ allowances for incinerator scrubber water pollutant loads without implementing P2 practices?**

Yes, but such an allowance must be based on the PFPR contribution to the facility’s production.

**If equipment used for dry production is cleaned first by running a dry carrier through to pick up residual product, followed by a water rinse, is the water rinse considered “the final rinse of a triple rinse” and therefore eligible for a waiver from pretreatment from the control authority?**

In general, that water rinse could be equated to the final rinse of a triple rinse; however, the control/permitting authority will use BPJ to determine whether a waiver is appropriate to be granted.



Does inventory management only concern the management of rinsates? May it also include liquid and/or solid raw materials and intermediates in order to reduce waste generation due to shelf-life limitations?

Inventory management systems can be used for the management of raw materials, intermediates, finished products, rinsates, etc. that are associated with PFPR operations. Inventory management is not a P2 practice required by the PFPR regulation, but generally is a good practice to incorporate.

## Listed Modifications to P2 Practices

If your formulation only requires the amount of water generated from the rinsing of pesticide active ingredient drums, can you discharge the rinsate from the inert drums?

Assuming that the facility has already implemented flow reduction measures when rinsing their pesticide active ingredient and inert drums, the facility would be able to use the listed inert modification. Note: many inert ingredients do not trigger FIFRA or RCRA drum rinsing requirements; therefore, inert-containing drums may not need to be rinsed prior to recycle or disposal.

Is a one-time test per product acceptable to justify the "BIOGROWTH" modification?

Yes, over the time period of the permit (usually three years), unless the product formulation or method of production is altered in a way that could affect the quality of the wastewater. If a facility is going to use laboratory testing to demonstrate biological growth (or other product deterioration), it should be performed with a sample that is representative of the formulation, as well as the typical storage period.

A facility has very long production runs (1 to 2 years) and cannot predict when product changeover will occur. When they do change over production, they generate a non-reusable rinsate. Is this facility eligible for the "DROP" modification?

After demonstrating the use of water conservation practices (as specified in P2 practice #1 in Table 8 of the PFPR rule), a facility could use historical production data to support the "DROP" modification. This modification allows the facility to discharge interior rinsates under the P2 alternative when the facility is dropping registration or production of the formulation and there is no compatible formulation for reuse of the rinsates or the facility can provide a reasonable explanation of why it does not anticipate formulation of the same or compatible formulation within the next 12 months.

## Nonlisted Modifications

Can economics be taken into account when asking for waivers on interior rinsates (i.e., for a nonlisted modification)?

EPA has not specified economics as a modification to Table 8; however, local authorities have the opportunity to use best professional judgement in considering nonlisted modifications. Note, though, that POTWs and control authorities may not be able to be flexible in approving nonlisted modifications for PFPR facilities if they are tied to what they are allowed to discharge to their receiving streams.

EPA did evaluate the cost of PFPR facilities complying with the P2 alternative and found that the P2 alternative (with listed

**Is there a listed modification for toll formulators/packagegers so that they do not have to dedicate solvent- vs. water-based production equipment, since their production changes so often and they cannot control what products are made when?**

Practice 7 in Table 8 of the rule allows for disposal of rinse water from cleaning shipping containers if a staged drum rinsing system is used. Is this system an acceptable alternative for solvent-based products as well (i.e., Practice 8)? In both practices, product quality objectives generally dictate disposal of drum rinsates. The use of staged drum rinsing will minimize the volume of waste generated. With increasingly stringent FIFRA regulations on cross-contamination, we are reluctant to reuse rinsate from containers that have been out of our direct control even though the containers are in dedicated service.

## **P2 Audit**

**Does a facility need to track raw material bags, which are emptied and disposed of, during the P2 audit?**

modifications) is economically achievable for the industry. In addition, EPA built in other types of waivers to treatment. EPA will allow the control authority to waive the pretreatment requirements for floor wash and the final interior rinse of a triple rinse that has been demonstrated to be non-reusable when the facility demonstrates that the level of pesticide active ingredients and priority pollutants in these wastewaters are present in concentrations too low to be effectively pretreated at the facility. In addition, these pollutants must neither pass through nor interfere with the operation of the POTW (see 40 CFR 403.5). The control authority should take into account whether the facility has used water conservation practices when generating such a non-reusable wastewater.

No. However, these toll formulators could install a solvent recovery system (as some toll formulators have already done) and take the listed modification ("RECOVERY"). In addition, the facility may be able to justify an unlisted modification; however, the fact that the facility is a toll formulator is not justification enough.

Drum rinsing stations allow for the recycle (as opposed to reuse) of drum rinsates (note: discharge from drum rinsing stations must be treated prior to discharge). EPA did not specifically list the use of countercurrent drum rinsing stations for solvent-containing drums because it is not common in the industry; however, a facility could seek an unlisted modification for this practice.

No, the P2 audit that is suggested by EPA for compliance with the PFPR rule focuses on water use and wastewater sources. Therefore, it is not intended to track nonwater waste sources such as empty raw material bags. However, it may be useful for facilities to evaluate all waste sources (including solid

wastes and air emissions) associated with their processes to identify potential P2 opportunities that limit cross-media transfers.

## P2 Allowable Discharge

**What is the *de minimis* exemption allowed by this rule?**

The rule does not have any *de minimis* exemptions, but does have a P2 allowable discharge, which is the discharge of any remaining PFPR wastewaters after implementation of P2 practices and any necessary treatment. The amount is expected to be small; however, it is not referred to as a *de minimis* exemption because it is not quantifiable.

**Is there a *de minimis* concentration of pesticide active ingredient allowed in wastewater (i.e., if the concentration is below the *de minimis* value, is it exempted from regulation)?**

No, there is no *de minimis* concentration of pesticide active ingredient exempted from the rule. However, certain products or pesticide active ingredients are exempted, and certain wastewaters are exempted based on their source. For Subcategory C, please refer to Section 455.40(c), (d), (e), and (f) for a discussion of these exemptions. For Subcategory E, please refer to Section 455.60(b) and (c). The final rule may be found in Appendix A of this guidance manual.

**Is there a volume or upper limit to the P2 allowable discharge?**

No, a facility may discharge whatever remains after implementation of the specified P2 practices (and treatment when necessary). Note: the P2 practices include water conservation practices, which will reduce the volumes of wastewater to be treated and discharged.

**How does a facility document “insignificant” levels of pesticide active ingredient and obtain a waiver for floor wash and outside packaging equipment wipe-down rinsate?**

A control authority may grant a waiver that removes the requirement to pretreat certain wastewaters prior to discharge. This waiver may be granted to indirect dischargers for two types of wastewaters: floor wash water or the final rinse of a non-reusable triple rinse (note that under the P2 alternative, exterior equipment cleaning rinsate is not required to be pretreated). The waiver may be granted only when the levels of pesticide active ingredients and priority pollutants are too low to be effectively pretreated and have been shown to neither pass through nor interfere with the operation of the POTW (see footnote 9 on page 57529 of the final rule, located in Appendix A of this guidance manual). The granting of such a waiver is through the best professional judgement of the control authority/POTW; therefore, the facility must work with the control authority/POTW to determine the documentation necessary to demonstrate these items.

## Treatment/Treatability Issues

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### Wastewaters Requiring Treatment

If a facility chooses the P2 alternative, will they always have to install and operate a wastewater treatment system? What PFPR wastewater requires treatment prior to discharge?

The P2 alternative of the final PFPR rule stipulates that direct discharging facilities must treat *any* PFPR wastewater that remains following implementation of the P2 practices. Direct discharging facilities that are also pesticide manufacturers may be able to use their current treatment systems to treat PFPR wastewaters. Indirect discharging facilities must only treat, prior to discharge, certain PFPR wastewaters that remain after the facility has implemented the P2 practices. These wastewaters are all interior equipment cleaning rinsates (including drum rinsates), leak and spill cleanup water, and floor wash water (see Section IV of the preamble to the final rule in Appendix A of this guidance manual).

Does DOT test bath water require treatment prior to discharge if a can has burst in the bath?

If the bath is operated as a batch bath, the bath water may be discharged indirectly without treatment, even if a can has burst in the bath. Treatment is required prior to direct discharge.

If the bath is operated as a continuous overflow bath, the bath water must either have some recirculation under the P2 alternative (and may be indirectly discharged without treatment) or the facility must meet zero discharge for this source.

Many facilities have standard operating procedures in place for when cans burst in a DOT bath. At many facilities, these procedures include collecting the pesticide-containing wastewater for off-site disposal.

### Treatment Technology Operations

#### *Activated Carbon*

What is the difference between the feed rate and the capacity of the carbon?

The feed rate is the rate at which wastewater enters the activated carbon adsorption unit. It is a unit of flow (i.e., volume per unit time), such as gallons per minute or liters per second. The feed rate should allow the wastewater sufficient time to contact the carbon so that contaminants can be adsorbed onto the carbon. If the feed rate is too high, pesticide active ingredients will pass through the carbon adsorption system that otherwise could have been adsorbed. During its treatability testing, EPA used a feed rate that gave the wastewater an empty bed residence time of approximately 15 minutes.

The capacity is the amount of pesticide active ingredient that will be adsorbed per amount of carbon. It is usually given in units of weight of pesticide active ingredient removed per weight of carbon, such as grams of pesticide active ingredient

removed per gram of carbon. Determining the capacity can help one determine how much carbon is needed in the unit to remove a particular amount of chemical.

**Does an activated carbon system have to be run continuously?**

No, an activated carbon system may be run in batch mode. Facilities may store wastewater prior to treatment (storage of wastewater is common in this industry). EPA observed PFPR facilities treating wastewater with activated carbon in batch mode and also performed activated carbon treatment in batch mode on wastewaters collected from PFPR facilities. In addition, PFPR facilities with wastewater matrices that vary daily may find that batches of stored wastewater may be more consistent from treatment period to treatment period.

**Since the PFPR rule does not require testing, how does one determine when to change carbon in an activated carbon system?**

Although the rule does not require specific testing, it does require that a treatment system be *demonstrated* to be well operated and maintained. To demonstrate this, a facility may need to perform some testing to determine when carbon breakthrough occurs for their system and therefore when the carbon needs to be changed.

**Can you use TOC to determine carbon breakthrough?**

In some cases, TOC or other parameters may be used as an indicator of carbon breakthrough by a pesticide active ingredient, but only after treatability testing or monitoring has been conducted that demonstrates that TOC is a good indicator of breakthrough of that pesticide active ingredient. A parameter may be a good indicator of carbon breakthrough for a pesticide active ingredient if it tends to break through before or about the same time as the pesticide active ingredient, but not if it breaks through after the pesticide active ingredient.

**When using activated carbon adsorption as a treatment technology, what does the facility do with the carbon once it is saturated? Must it be disposed of as a hazardous waste?**

Spent activated carbon should be disposed of or regenerated. Manufacturers of activated carbon may take the carbon back for regeneration; however, the cost of regeneration typically depends on the amount of carbon to be regenerated, the distance to the regeneration facility, and other factors. Some facilities may wish to dispose of their spent activated carbon instead of having it regenerated. In this case, the activated carbon would need to be disposed of as hazardous waste if it meets the definition of hazardous waste in 40 CFR 261.4. Many pesticide active ingredients are not RCRA-listed hazardous wastes, and most PFPR wastewaters do not exhibit hazardous waste characteristics. Residue from treatment of PFPR wastewaters, such as spent activated carbon, would not be considered a hazardous waste if it did not contain a listed hazardous waste and/or did not exhibit a characteristic of a hazardous waste.

## *Emulsion Breaking*

**When performing emulsion breaking, won't the removal of the oil/scum layer remove organic pollutants?**

Yes. The oil/scum layer removed during emulsion breaking typically contains some level of organic pollutants, and may also include organic pesticide active ingredients. During treatability tests conducted by EPA on wastewater collected from PFPR facilities, the emulsion breaking step typically lowered the pesticide active ingredient concentration in the remaining wastewater. However, it did not typically reduce the pesticide active ingredient concentration enough to be considered an adequate pesticide active ingredient treatment technology.

In general, pretreatment technologies are meant to be used in conjunction with the pesticide active ingredient destruction and removal technologies listed in Table 10, or other technologies demonstrated to be equivalent to those listed in Table 10. However, it is possible that some technologies that EPA has identified as pretreatment technologies can provide treatment equivalent to the technologies listed in Table 10. In many of the treatment systems sampled by EPA, removal of pesticide active ingredients was observed during pretreatment steps. For example, emulsion breaking typically occurs at conditions of low pH and temperature, which may also hydrolyze some pesticide active ingredients. An equivalency demonstration as described in Chapter 7 of the P2 Guidance Manual would be required for any pretreatment technology that a facility wished to use as the primary treatment technology for a pesticide active ingredient.

**Does a facility have to use sulfuric acid or other concentrated acid to perform the emulsion breaking step?**

No. It is not necessary to use a specific acid to perform emulsion breaking, as long as the selected acid lowers the pH to the desired level. In general, any strong acid (e.g., sulfuric, hydrochloric, or nitric acid) could be used. During EPA treatability studies on PFPR wastewater, sulfuric acid was used to lower the pH of wastewaters for emulsion breaking and neutralization after hydrolysis at high pH. However, facilities should be aware that the addition of acid to PFPR wastewater may generate toxic or hazardous components, so an acid should be chosen that will minimize the potential adverse health and safety risks and the generation of toxic and hazardous compounds. For chemicals that react to form hazardous or toxic byproducts under acidic conditions, regardless of the acid used, it may be advisable to use a different treatment technology that does not lower the pH of the wastewater, or to use P2 practices or off-site disposal instead of treating the wastewater.

## *Hydrolysis*

**What types of acid are used to perform acid hydrolysis?**

There is no specific type of acid that must be used for any of the processes used to treat PFPR wastewaters, including acid



hydrolysis. The only requirement is that the acid be capable of achieving the desired pH. In general, any strong acid, such as sulfuric, hydrochloric, or nitric acid, could be used. During EPA treatability studies on PFPR wastewaters, sulfuric acid was used to lower the pH of wastewaters for emulsion breaking and neutralization after hydrolysis at high (alkaline) pH. Facilities should also be aware that toxic or hazardous components may be generated through the addition of acid to PFPR wastewater, so an acid should be chosen that will minimize the potential adverse health and safety risks and the generation of toxic and hazardous compounds.

### *Precipitation*

**When performing hydrogen sulfide precipitation, what does EPA suggest to ensure that there is no excess hydrogen sulfide in the effluent from the system?**

When performing chemical precipitation to remove metals or organo-metallic pesticide active ingredients, sodium hydroxide and/or sodium sulfide may be used to form these contaminants into a precipitate. EPA does not recommend adding hydrogen sulfide to remove pesticide active ingredients, and hydrogen sulfide should not form during sulfide precipitation as long as a pH of 7 or above is maintained in the system.

In general, the amount of sodium hydroxide and sodium sulfide added to wastewater to perform chemical precipitation should be based on the concentration of metals contained in the wastewater. However, facilities should conduct bench- or full-scale treatability tests to optimize the performance of their chemical precipitation treatment step. To determine whether excess sodium sulfide has been added during the chemical precipitation step, a facility should monitor the chemical precipitation effluent during the treatability testing and during full-scale treatment as it deems necessary. EPA based its cost estimates on an addition of 0.416 pounds of sodium sulfide per 1,000 gallons of wastewater treated for all facilities because it did not have information available on the specific concentrations of metallic and organo-metallic contaminants in PFPR wastewaters.

### *Treatment Residuals*

**How are the oil/sludge layers disposed of from treatment systems? Are they hazardous?**

The oil/sludge layers from treatment systems may be disposed of in a variety of ways. They may be reused in the PFPR product, disposed of in an on-site treatment unit (such as an incinerator), or they may be disposed of off site. Off-site disposal may be done at a centralized waste treatment facility, waste-oil recovery facility, or other treatment and disposal facility. Oil, sludge, and other residuals from treatment are hazardous waste if they meet the definition of hazardous waste in 40 CFR 261.4.

## Determination of Treatment Equivalency

**If a wastewater requires treatment, does it have to be treated using the treatment technologies listed in Table 10?**

No, facilities may use the appropriate Table 10 technology *or* an equivalent technology *or* a pesticide manufacturing treatment system that is treating the same pesticide active ingredients that are manufactured as are formulated/packaged/repackaged.

**How does one identify an appropriate treatment technology for a pesticide active ingredient that is not listed in Table 10?**

EPA tried to include all pesticide active ingredients identified at the time of promulgation of the regulation. As new pesticide active ingredients come into being, one could apply the technology transfer methodology (described in the treatability database reports, listed in Table 6-1 in Chapter 6 of this manual) that EPA used to develop Table 10. Also, as a starting point, one could identify the treatment technology(ies) listed in Table 10 for structurally similar pesticide active ingredients.

**How does a facility justify using a technology other than those listed in Table 10?**

The facility must demonstrate that the technology will be just as effective as the technology listed in Table 10 of the final rule for the pesticide active ingredient in question, or that the technology is used in a pesticide manufacturing treatment system used to treat the same pesticide active ingredient. Chapter 7 of the P2 Guidance Manual discusses the requirements for demonstrating that a technology will provide treatment performance equivalent to the technology listed in Table 10. In order to demonstrate equivalence, a facility must include treatability test results or sampling results (including those from literature, similar wastewater matrices, or self-monitoring) in their on-site compliance paperwork. A more detailed discussion of treatability tests is contained in Chapter 6 of the P2 Guidance Manual. The determination of equivalency will be based on a combination of the percent removal of pesticide active ingredient (in general, greater than 90% removal is required), final effluent concentration of the pesticide active ingredient, and the minimum detection limit for the pesticide active ingredient.

If treatability information is not available for a particular pollutant, it may be necessary to identify a treatment technology based on the facility's knowledge of the pollutant. For example, a technology that is effective on one pesticide active ingredient is often effective on other pesticide active ingredients with similar chemical properties and structure. Treatment effectiveness should, however, be verified through a treatability test. See Table 6-1 in Chapter 6 for sources of information on identifying treatment technologies and transferring treatability data from one pesticide active ingredient to another.

**Are any pretreatment technologies alone effective enough to remove pesticide active ingredients and priority pollutants, or must they be used in combination with other technologies?**

**A facility that currently operates an activated carbon column generates wastewater containing 2,4-D, MCPP, and MCPA (all structurally similar chemicals). Table 10 lists chemical oxidation for 2,4-D and MCPA, but lists activated carbon for MCPP. Does the facility have to install both treatment technologies in an on-site treatment system?**

In general, pretreatment technologies are meant to be used in conjunction with the pesticide active ingredient destruction and removal technologies listed in Table 10, or other technologies demonstrated to be equivalent to those listed in Table 10. However, it is possible that some technologies that EPA has identified as pretreatment technologies can provide treatment equivalent to the technologies listed in Table 10. In many of the treatment systems sampled by EPA, removal of pesticide active ingredients was observed during pretreatment steps. For example, emulsion breaking typically occurs at conditions of low pH and high temperature, which may also hydrolyze some pesticide active ingredients. An equivalency demonstration such as the one described in Chapter 7 of the P2 Guidance Manual would be required for any pretreatment technology that a facility wished to use as the primary treatment technology for a pesticide active ingredient.

Not necessarily. The PFPR rule allows technologies other than those listed in Table 10 to be used to treat wastewater containing a particular pesticide active ingredient, provided the facility can demonstrate that the technology is equivalent to the one listed in Table 10 (Chapter 7 of the P2 Guidance Manual discusses the requirements for demonstrating that a technology will provide treatment performance equivalent to the technology listed in Table 10). In this case, if the facility demonstrates that chemical oxidation is equivalent to activated carbon adsorption for MCPP, or that activated carbon adsorption is equivalent to chemical oxidation for 2,4-D and MCPA, only one of the technologies would need to be installed.

The technologies listed in Table 10 to 40 CFR Part 455 are those that are expected to effectively treat the PAI. When more than one technology can effectively treat a PAI, EPA listed the technology that is least expensive to employ. In the case of 2,4-D, EPA has data indicating that it is treatable by either chemical oxidation or activated carbon adsorption, but chemical oxidation is expected to be less expensive, therefore this technology is listed in Table 10. In the cases of MCPP and MCPA, EPA has data indicating that activated carbon adsorption is an effective treatment, but information on chemical oxidation is not available for these chemicals. Listed below are references gathered by EPA concerning the treatability of 2,4-D, MCPP, and MCPA. These documents can be found in the administrative record for the final PFPR rule using the document control numbers (DCNs) shown below.

Aly, O.M. et al., *Removal of 2,4-Dichlorophenoxyacetic Acid Derivatives from Natural Waters*, Rutgers University, Dept. of Environmental Science, New Brunswick, NJ, February 1965 (DCN F6303).

**Is an incinerator treating wastewater from pesticide manufacturing and PFPR operations that has an NPDES discharge permit for scrubber water considered a wastewater treatment unit (i.e., is the incinerator exempt from RCRA Part B permit requirements)?**

**Can EPA provide a reference in the pesticide manufacturing development document/final rule that demonstrates that incineration is equivalent and/or superior to treatment methods listed in the PFPR rule for various pesticide active ingredients?**

Research Triangle Institute, *Treatment Technology For Pesticide Manufacturing Effluents: Atrazine, Maneb, MSMA, and Oryzalin*, Research Triangle Park, NC, February 2, 1980 (DCN F5795).

Environmental Science and Engineering, Inc., *Final Report of Laboratory Study of Pesticides Wastewater Treatability*, November 11, 1985 and revised January 9, 1987 (DCN F6328).

No, the incinerator described above would not be exempt from RCRA Part B permit requirements for the following reason.

A unit that satisfies the definition of “wastewater treatment unit” set forth in 40 CFR 260.10 is exempt from Part 264 requirements for treatment, storage, and disposal facilities (TSDFs), Part 265 requirements for interim status TSDFs, and Part 270 requirements for RCRA permits. See 40 CFR 264.1(g)(6), 265.1(c)(10), and 270.1(c)(2)(v).

To satisfy the definition of “wastewater treatment unit” at 40 CFR 260.10, the unit must be a device that:

- (1) Is part of a wastewater treatment facility that is subject to section 402 or 307(b) of the Clean Water Act;
- (2) Receives and treats or stores an influent hazardous wastewater, or that generates and accumulates a hazardous wastewater treatment sludge, or treats or stores a hazardous wastewater treatment sludge; and
- (3) Is a tank, as defined in § 260.10.

The incinerator described in the question would not satisfy the third criterion. Although the incinerator generally meets the broad definition of tank, it also meets the more specific definition of incinerator in § 260.10. EPA does not consider a unit to be a “tank” if another, more immediately relevant term would apply to that unit. Therefore, the incinerator would not be a wastewater treatment unit, and thus, would not be exempt from the requirements in Parts 264, 265, and 270. Instead, the incinerator would be subject to the Subpart O requirements for incinerators in Parts 264 and 265, permit requirements in Part 270, and any other relevant requirements.

Table 7-11 in the *Development Document for Effluent Limitations Guidelines, Pretreatment Standards, and New Source Performance Standards for the Pesticide Chemicals Manufacturing Point Source Category* (EPA 821-R-93-016, September 1993) lists the BAT technologies used to establish numerical limitations for 120 pesticide active ingredients in that industry. These BAT technologies are considered to be equivalent to the technologies listed in Table 10 of the final PFPR rule.

Table 7-11 of the Pesticide Manufacturing Development Document lists incineration as the BAT technology for the following

pesticide active ingredients: pendimethalin, acephate, phorate, terbufos, captafol, fenarimol, isopropalin, and tebuthiuron.

In addition, the preamble to the PFPR regulation (61 FR 57517) states that on-site incineration is equivalent to off-site incineration and is considered to meet zero discharge for the PFPR rule. See page 57527 of the preamble to the final rule located in Appendix A for more discussion regarding on-site incineration as a means to achieve zero discharge.

## Treatability Testing

**Did EPA evaluate inert materials in treatability tests?**

EPA did not focus on the inert materials; however, in addition to analyzing wastewaters for the specific pesticide active ingredients, EPA analyzed for a full scan of organic and metal pollutants, including priority pollutants, to identify other potential pollutants of concern from inert ingredients. Treatment efficiencies were focused on pesticide active ingredients and priority pollutants.

**Are the EPA treatability reports, including those reports listed at the end of Chapter 5, available on the Internet?**

Not at this time, although all treatability reports generated during the development of this PFPR effluent guideline are available through EPA's Water Docket (see page 46 of Chapter 5 for information on contacting the EPA Water Docket). Please note that some treatability reports contain confidential business information and are available in a nonconfidential form.

**Do treatability tests require elaborate QA/QC procedures?**

No, the level of QA/QC conducted during EPA sampling and treatability testing is not necessary for facility treatability testing, but facilities should use a level of QA/QC that will ensure the quality of their data. Chapter 6 of the P2 Guidance Manual provides some direction on using QA/QC in treatability testing. The QA/QC procedures include preparation of a QA/QC plan and the collection of field duplicate, field blank, equipment blank, and trip blank samples.

**What type of samples should a facility collect to test how the treatment system is operating (grab vs. composite)?**

The type of samples collected to determine the efficiency of an operating treatment system depends on whether the unit operation is a batch or continuous operation. Generally, grab samples are collected for batch operations and composite samples are collected for continuous operations. Samples collected to characterize raw waste streams are typically grab samples because of the batch nature of wastewater generation. Samples collected during treatability testing are typically grab samples.

**Do bench-scale test results scale up well to full scale?**

The correlation between bench- and full-scale test results will depend on a variety of factors, including how well the bench-scale test was designed and performed, the difference in wastewater volume treated between bench- and full-scale treatment, the type of technology tested, the contaminants in the wastewater treated, and other factors. If a bench-scale test is well



designed and performed, it should scale up well. However, the scale-up invariably results in some difference from bench-scale results due to the different equipment, operating conditions, and other parameters at the full scale. Although the bench-scale test can provide valuable information for the design and operation of a full-scale treatment system, it is commonly necessary to adjust the full-scale treatment system design and operating parameters to optimize performance. For scaling up from a bench-scale test to a large-volume full-scale treatment system, it may be advisable to perform a pilot-scale treatability test on an intermediate scale. Also, in some PFPR facilities, the volume of PFPR wastewater to be treated may only require equipment that typically would be considered pilot- or bench-scale.

An example that illustrates the difference in how different treatment technologies compare in terms of scale-up is discussed below. Hydrolysis bench-scale tests typically correlate well with full-scale treatment, provided an actual wastewater was treated, the full-scale unit is well-mixed, and other operating parameters such as temperature, pH, and treatment time are the same. However, activated carbon bench-scale tests may not scale up as well. Activated carbon bench-scale tests frequently use a beaker in which some activated carbon is allowed to come into equilibrium with a wastewater to determine the saturation loading. This is different from an actual treatment system in which wastewater passes through a bed of activated carbon, and therefore can result in differences between saturation loadings observed during bench- and full-scale operation.

**What reference shows which pesticide active ingredients in Table 10 had treatment technologies established based on a transfer of treatability data?**

This information is presented in the *Final Pesticide Formulators, Packagers, and Repackagers Treatability Database Report and Addendum* (see Chapter 5 for more detail on how to access these sources).

## Sampling/Monitoring

**Why is it necessary to evaluate the wastewater matrix, particularly as it pertains to inert ingredients that may be present in the wastewater?**

Inert ingredients are covered in discharges from PFPR operations if they are also priority pollutants. However, the reason EPA suggests evaluating the wastewater matrix during the P2 audit is to identify possible contaminants in wastewater that may hinder effective treatment of pesticide active ingredients or priority pollutants. In these cases, the wastewater may require pretreatment in order to allow the treatment system to effectively remove the pesticide active ingredients.



**How does one determine if the pesticide active ingredient is in the water phase or oil/sludge phase of a wastewater? Can one use alcohol-water coefficients?**

Octanol-water coefficients can be used to determine whether a pesticide active ingredient is likely to be in the water phase or the oil phase of a wastewater. However, octanol-water coefficients are determined using a pure octanol-water system, whereas PFPR wastewaters typically contain a variety of contaminants that may render the octanol-water coefficient invalid for a particular wastewater. In addition, octanol-water coefficients are not available for many pesticide active ingredients. Therefore, the various phases of a wastewater may need to be chemically analyzed to determine what fraction of pesticide active ingredient has partitioned to each phase.

**If a facility chooses to meet zero discharge through no discharge of process wastewater pollutants (rather than no flow), how do they show "zero"?**

In order to demonstrate zero discharge analytically (instead of via "no flow"), any pesticide active ingredient potentially present in the wastewater must have an EPA-approved analytical method for use in wastewater, and the pesticide active ingredient must not be present at or above the detection limit in the approved method.

Some methods contain a detection limit, a method detection limit (MDL; 40 CFR 136, Appendix B), an estimated detection limit, or some other detection limit concept. The words "detection limit" are generally understood to encompass these terms.

**Does a facility need to monitor for priority pollutants when conducting a treatability test to develop a relationship for surrogate parameters used to demonstrate a treatment system is well operated and maintained? If so, must they monitor for the whole list of priority pollutants, or only those pollutants that were identified in the BMR?**

The PFPR rule does not require monitoring or the establishment of a surrogate parameter for compliance. However, if a facility chooses to use a surrogate parameter to demonstrate that a treatment system is well operated and maintained, they would monitor for specific pesticide active ingredients and the constituent chosen as the surrogate to establish the relationship between the surrogate and the PFPR process wastewater pollutants. In terms of priority pollutants monitoring, a facility could use a list of those priority pollutants identified in the BMR; however, if products/raw materials have changed since the BMR was developed, the facility should include any additional priority pollutants expected to be in the wastewater.

**Are industrial users (IUs) required to submit monitoring data to the POTW/control authority if samples are collected in addition to samples required by the PFPR regulation?**

Sample collection is not specifically by the PFPR regulation. However, the individual control mechanism with the POTW/control authority may require monitoring and analysis to demonstrate continued compliance; this is described in 40 CFR 403.12(g).

If a facility is using certain monitoring data to back up or demonstrate information in their initial or periodic certifications for the P2 alternative, then such data should be kept with the facility's on-site compliance paperwork and would be available to the POTW/control authority, as well as to enforcement officials.

## EPA Test Methods

**What if a wastewater matrix causes interference with the analytical method (and therefore, the detection limit is higher than normal)?**

The discharger must eliminate the interference using the procedures given in EPA's *Guidance on Evaluation, Resolution, and Documentation of Analytical Problems Associated with Compliance Monitoring* (EPA 821-B-93-001) or other interference elimination procedures.

**Are the EPA-approved methods highly specific methods?**

Many of the EPA-approved methods are based on methods developed by pesticide active ingredient manufacturers. In general, these methods are expensive to run and not performed by many laboratories. However, there are several methods that will detect a series of different pesticide active ingredients. For example, Method 1656 is used to analyze organo-halide pesticides. For more information on pesticide active ingredient methods, please reference *Methods for the Determination of Non-conventional Pesticides in Municipal and Industrial Wastewater* (EPA 821-R-93-010).

EPA has also produced other reference materials on water and wastewater methods, including the Environmental Monitoring Methods Index (a powerful PC database that electronically links over 4,000 substances with methods and regulations) and the *Methods and Guidance for the Analysis of Water* (EPA 821/C-97-001). These reference materials are available through the National Technical Information Service (NTIS), which can be reached between 8:30 a.m. and 5:00 p.m. Eastern Time at (703) 487-4639 or via the Internet at <http://www.ntis.gov/ordernow>.

**Does EPA have method detection limits for each pesticide active ingredient that has an EPA-approved analytical method?**

Yes, although facilities must also take into account the wastewater matrix and the number of dilutions performed by the laboratory.

**Is it possible to use a non-EPA-approved method for pesticide active ingredients that do not have approved methods promulgated (i.e., use a facility's method)?**

Yes. For pesticide active ingredients that have no EPA-approved analytical methods, PFPR facilities may use alternative sampling and analytical methods as specified in 40 CFR 136.4 and 403(g)(4). See page 57548 in the preamble to the final rule in Appendix A for more detail.

**Are the methods promulgated under Part 455 for pesticide active ingredients valid for the NPDES program and pretreatment programs under Part 136?**

Yes. Language in 40 CFR 403 and 136 allows for analytical methods found in Part 136, Section 304(h) of the Clean Water Act, or that are approved by the Administrator (403.12(g)(4) and 136.4, 136.5). Therefore, although the Part 455 regulations have not been incorporated into Part 136, the Administrator has approved these analytical methods by signing the Pesticide Manufacturing Effluent Limitations Guidelines and Standards (58 FR 50637; September 28, 1993). These pesticide active ingredient methods have been published in a document entitled, *"Methods for the Determination of Nonconventional Pesticides in*

*Municipal and Industrial Wastewater*, EPA-821-R-93-010-A, Revision 1, August 1993.”

**Are the methods part of the AWWT (American Waste Water Treaters) published methods?**

The EPA-approved pesticide active ingredient methods have been published in the FR (40 CFR 455.5, Subpart D), and are available from EPA (*Methods for the Determination of Nonconventional Pesticides in Municipal and Industrial Wastewater*, EPA-821-R-93-010-A, Revision 1, August 1993).

**How does a facility adjust to changing method detection limits (MDLs) for pesticide active ingredients if the “zero discharge” option (with flow) is the compliance option of choice? Would a capping of MDLs be allowed?**

No. Facilities using MDLs to demonstrate compliance with zero discharge are allowed to do so because MDLs are the closest to zero that can be currently measured. The MDLs are *not* the set limitation. If improvements in analytical instruments leads to the lowering of MDLs, those facilities demonstrating zero using MDLs would need to show compliance with the lower MDLs.

## Determination of Sufficient Treatment

**What does EPA consider “effectively treated” for this rule (i.e., is it a certain percent removal)?**

A facility can evaluate the effectiveness of a treatment technology by performance measures that look at how much contaminant is removed from the wastewater, the amount of other waste generated by the treatment step, and the cost of the treatment. The facility should evaluate three measures to determine if the treatment technology effectively removed the contaminant: percent removal, final effluent concentration, and minimum detection limit. For example, if 95% or more of a constituent is removed by a technology, that technology would be considered effective. Conversely, if a technology only removes 30% of a constituent, but the constituent is removed to below its detection limit, EPA considers the constituent to be effectively treated. The facility should also take cost into account. A technology may effectively remove a constituent, but at a high cost relative to other treatment technologies that may also effectively remove the constituent. Chapter 6 of the P2 Guidance Manual provides more detail on how to measure treatment effectiveness.

**If a facility generates high concentrations of pesticide active ingredients in rinsewaters, is the goal to treat the wastewater to nondetect levels of pesticide active ingredients? If not, what criteria determine whether a wastewater is effectively treated?**

Nondetect levels are a good goal, but are not required by the P2 alternative. The goal of the P2 alternative is to use the pollution prevention, recycle, and reuse practices in the rule (in combination with treatment when necessary) to achieve a reduction of pollutants, while preventing possible cross-media impacts associated with zero discharge. Following the implementation of the P2 practices, evaluation of the percent removal or destruction of the pesticide active ingredient, as well as the final effluent concentration and detection limit, determines whether a wastewater has been effectively treated. In most cases, these technologies can reduce the concentration of

**Will most PFPR facilities be able to run a treatment system as envisioned by EPA, in terms of size and cost?**

the pesticide active ingredient to at or near detection limits. A treatment goal may be set by the control/permitting authority using best professional judgement.

Yes. Most PFPR facilities do not generate large volumes of water, and will be able to store their wastewater over time and treat the water in 3 to 4 batches per year. In many cases, facilities will be able to implement P2 practices instead of treating their wastewater. Some facilities may also choose to contract haul small volumes of wastewater for off-site disposal.

The treatment systems effective on PFPR wastewaters generally use simple, easily operated unit operations that use standard, off-the-shelf equipment, particularly at the small scale needed by the typical PFPR facility. The treatment system can be designed to be operated in a batch mode, so facilities generating a small volume of wastewater can store it until a sufficient volume is available for treatment. During the rulemaking process, EPA designed a small-scale wastewater treatment system that was then used to treat wastewaters collected from PFPR facilities in batches of about 100 gallons. This system used standard, off-the-shelf equipment. EPA also evaluated the cost of compliance with the P2 alternative and found that the P2 alternative (with listed modifications and appropriate treatment) is economically achievable for the industry.

**Is EPA concerned about reaction byproducts that may be generated during wastewater treatment operations? Sometimes these byproducts have a negative impact on the environment, but are not analyzed or treated.**

Yes, EPA is concerned about reaction byproducts; however, for this rule, EPA focused on those reaction byproducts that are pesticide active ingredients or priority pollutants. In general, reaction byproducts have lower toxicity factors than the pesticide active ingredients themselves.

The control/permitting authority should evaluate the possible impacts on local limitations from specific chemical byproducts that may form during treatment operations. The presence of these byproducts may require additional treatment, or may require a different primary treatment technology to be used in specific instances.

In one treatability study conducted by EPA, chlorinated and other organic compounds were generated from chemical oxidation of PAIs using a chlorine-based oxidizer. Chemical oxidation produced: chloroform, bromodichloromethane, dibromochloromethane, and acetone in wastewater containing Metam; 1,3,5-trithiane in wastewater containing KN-Methyl; and N,N-dimethylformamide in wastewater containing Namet. Polychlorinated dioxins were also detected in parts per quadrillion concentrations in these wastewaters after treatment. Where chemical oxidation with a chlorinating agent results in the generation of chlorinated organics, use of a non-chlorinating oxidizer, such as ozone or peroxide may pro-

**Why is “pollution prevention” listed as an appropriate *treatment* technology?**

vide effective treatment without generating chlorinated organics.

Based on available data, EPA was unable to identify a cost-effective technology for use in the PFPR industry for some pesticide active ingredients on Table 10. Therefore, EPA determined that, if a facility generates wastewater that *only* contains such pesticide active ingredients, they are in compliance with the rule if they have implemented the Table 8 pollution prevention practices (i.e., such facilities do not have to treat PFPR wastewaters containing these specific PAIs prior to discharge).

**Are all the different technologies listed in Table 10 part of a pretreatment system that a facility should have in place to treat wastewater prior to discharge to a POTW?**

The technologies required for an on-site treatment system are identified based on the pesticide active ingredients present in the wastewater discharged from the facility. These technologies could be combined into one treatment train, or could be conducted individually on separate wastewaters, depending on how the facility chooses to treat their wastewater. In addition, if emulsions exist, an emulsion breaking step (or equivalent technology) is required to meet the definition of “appropriate” treatment.

**Why isn’t neutralization considered treatment?**

For this rule, treatment is intended to mean removal or destruction of pesticide active ingredients or priority pollutants. Neutralization does not achieve that purpose.

**Is there any guidance on how much money facilities should spend on treatment of PFPR wastewater?**

There is no real guidance on the amount of money a facility should spend on wastewater treatment; it depends on a number of factors and the facility should consider all of these factors in making a final compliance decision. These factors include the amount of wastewater being generated, treatment currently in place at the facility, the size of the facility, and the how economically sound the facility is. A facility should consider whether treatment is the most cost-effective solution for their particular situation. A facility may be able to treat their wastewater adequately using available technologies; however, if the amount of wastewater that would need to be treated is very small, the facility may find it more cost-effective to contract haul it instead of installing or adding additional treatment technologies.

EPA performed an economic assessment for this rulemaking to determine the most cost-effective regulation for the PFPR industry. As part of this assessment, EPA estimated the cost to comply with the regulation. Subcategory C facilities were estimated to incur an average annual cost of \$39,900 for stand-alone PFPR facilities and \$373,000 for PFPR/manufacturing facilities; refilling establishments (Subcategory E facilities) would incur compliance costs of \$1,000 or less. The estimated total annual cost to the industry is \$29.9 million.



**Why calculate the destruction and removal efficiency (DRE) for a constituent that is below the detection limit in the effluent?**

The PFPR regulation does not require facilities to calculate the DRE of pesticide active ingredients or priority pollutants; however, it may be helpful to determine which treatment units in a treatment train are providing significant removal of the constituents of interest. For example, the following table summarizes the removal of a constituent through a treatment system consisting of hydrolysis and activated carbon. The DRE shows that even though activated carbon removes the constituent to below detection (i.e.,  $\mu\text{g/L}$ ), the hydrolysis unit achieves the majority of the constituent's reduction (i.e., 98 percent).

Wastewater Source	Concentration ( $\mu\text{g/L}$ )	DRE
Raw wastewater	1,000 $\mu\text{g/L}$	—
Hydrolysis effluent	20 $\mu\text{g/L}$	98%
Activated carbon effluent	<10 $\mu\text{g/L}$	>50%

In addition, calculating the DRE can help facilities demonstrate equivalency of an alternate technology and/or demonstrate that the treatment system is “well operated and maintained.”

**Can EPA clarify what is meant by “organics” in Table 6-2, Wastewater Characteristics That Adversely Impact Treatment Effectiveness, of the P2 Guidance Manual (i.e., are there specific organic chemicals that interfere with activated carbon adsorption)?**

“Organics” refers to any organic chemical contained in the wastewater being treated. Due to the variable nature of PFPR formulations and operations, the specific organic chemicals contained in PFPR wastewaters and their concentrations vary from facility to facility. Therefore, Table 6-2 does not identify specific organic chemicals, but indicates where the presence of organic chemicals may cause a technology to perform poorly. In the case of activated carbon adsorption, organic chemicals will compete with the pesticide active ingredient for available adsorption sites on the carbon, reducing the total amount of pesticide active ingredient that will be adsorbed by a given amount of activated carbon, and resulting in more frequent carbon changeouts. The degree to which organic chemicals will affect the performance of activated carbon adsorption will depend on the specific organic chemicals in the wastewater, the concentrations of those chemicals, and the pesticide active ingredients targeted for removal by activated carbon adsorption. In some cases, the presence of organics may not significantly affect the performance of activated carbon, while in others it may render it ineffective. Table 6-3 lists some pretreatment technologies that may be useful in removing organics prior to treatment by activated carbon adsorption.

**Who makes the decision on how much treatment is needed?**

The control/permitting authority must use BPJ to determine if the facility has installed the appropriate treatment and if the treatment system is well operated and maintained.



**What happens if a facility needs to add different technologies to their treatment system in the future?**

If a facility plans to add new production to their PFPR operations, they must incorporate the appropriate P2 practices into their operations and identify the appropriate or equivalent treatment technology(ies) to be put in place if the new production generates wastewater to be discharged. The P2 practices and treatment technologies must be certified (e.g., at the time of submittal of the periodic certification) and approved by the control/permitting authority before the facility can begin to discharge wastewater associated with the new production.

**If a facility operates a treatment system consisting of hydrolysis and activated carbon, and decides to drop hydrolysis and only run activated carbon, would the facility require approval first?**

If the Table 10 technologies for the pesticide active ingredients present in the wastewater are both hydrolysis and activated carbon, then the facility would need to show that activated carbon is *equivalent* to hydrolysis for those pesticide active ingredients whose listed technology is hydrolysis before removing the hydrolysis unit from the treatment system. In addition, the facility must also demonstrate that the activated carbon system would be well operated and maintained. This would include reevaluating the frequency of carbon changeout to account for the carbon removing more pesticide active ingredients (and therefore becoming saturated more quickly).

## Well Operated Treatment Systems

**If a facility adds a new product (e.g., diazinon), which has a Table 10 technology of hydrolysis, can the facility use different surrogates (e.g., half-life, treatment time, pH, temperature) for that one pesticide active ingredient than are being used for the rest of the system (e.g., TOC and carbon change-out for activated carbon units)?**

Yes. However, a surrogate parameter that is approved for a facility's treatment system will depend on the treatability data used to support the use of the surrogate and the ability to show a relationship in the data between the pesticide active ingredient and the surrogate.

## Compliance

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### Baseline Monitoring Report

**Is guidance available for completion of the baseline monitoring report (BMR)?**

See Appendix E for EPA's guidance memorandum on completing the BMR. The BMR was due on July 7, 1997 for existing indirect dischargers.

**To whom is the BMR submitted and where is this stated?**

The BMR is submitted to the control authority. For states that have approved pretreatment programs, the BMR goes to the POTW/control authority. In other states, the BMR may be submitted to the regional EPA office. Section 403 of Title 40 of the

**Does the PFPR regulation require monitoring, other than priority pollutant monitoring for the BMR?**

CFR, as well as EPA Pretreatment Bulletin #13 (included in Appendix E), discuss these issues.

**How many samples are required for the BMR?**

No. Facilities will be able to generate a list of pesticide active ingredients based on the products made at their facilities. EPA guidance has suggested that monitoring for priority pollutants or other surrogate parameters (e.g., TOC) would be helpful since facilities may not always be aware of sources of these pollutants in their wastewater, particularly pollutants that may be present through the addition of inert materials to the formulated products.

40 CFR 403.12(b)(5)(iv) states, "The User shall take a minimum of one representative sample to compile that data necessary to comply with the requirements of this paragraph." The type of sample will depend on the nature of the pollutant as described in 40 CFR 403.12(b)(5)(iii), which states "a minimum of four (4) grab samples must be used for pH, cyanide, total phenols, oil and grease, sulfide, and volatile organics. For all other pollutants, 24-hour composite samples must be obtained through flow-proportional composite sampling techniques where feasible. The Control Authority may waive flow-proportional composite sampling for any Industrial User that demonstrates that flow-proportional sampling is infeasible. In such cases, samples may be obtained through time-proportional composite sampling techniques or through a minimum of four (4) grab samples where the User demonstrates that this will provide a representative sample of the effluent being discharged." If the process produces a discharge that is a homogenous batch, one grab sample may be taken.

**If a facility is covered under other categorical standards and already has a BMR on file with the control authority, do they need to submit a new BMR? Does this also apply to PFPR/manufacturing facilities that commingle wastewater from PFPR and pesticide manufacturing operations and that previously submitted a BMR for compliance with the pesticide manufacturing regulations [58 FR 50637]; can they revise that BMR or do they have to perform separate BMR monitoring for their PFPR wastewater?**

At a minimum, the facility should update the non-monitoring sections of the BMR (e.g., process information, flow). In addition, if the facility is choosing the P2 alternative, they would need to list the P2 practices, if any, currently in place that affect their PFPR production/wastewaters. The facility may have to submit monitoring data for pollutants that were not present at the time they submitted the BMR for the pesticide manufacturing effluent guidelines; otherwise, historical monitoring would suffice.

**In submitting the BMR, do PFPR/manufacturing facilities have to test commingled wastewater for the 126 priority pollutants or for specific pesticide active ingredient pollutants listed in Table 10?**

In submitting a BMR for the PFPR regulation, facilities must monitor only for priority pollutants. Specific pesticide active ingredients used in PFPR products must be listed in the BMR, but do not require testing.

**Can a facility use toxicity measurements for their BMR if they haven't been testing the specific pesticide active ingredients?**

The BMR does not require pesticide active ingredient-specific measurements, although if a facility is choosing the P2 alternative, they should list the pesticide active ingredients that are present (or believed to be present) and monitor for the priority pollutants. Facilities are certainly welcome to provide additional data (e.g., toxicity measurements).

## **P2 Alternative/Allowable Discharge**

**Can you choose zero discharge for an individual source?**

Yes, as long as you clearly indicate it in your compliance paperwork.

**If a direct discharging PFPR facility chose to comply with the PFPR effluent guidelines by meeting a zero discharge limitation and were issued an NPDES permit that included zero discharge for their PFPR wastewaters, at the time of permit renewal or reissue, could that facility choose to switch to the P2 alternative? Would there be any "backsliding" implications?**

Yes, a facility could switch from zero discharge to the P2 alternative at the time of permit renewal without invoking any regulations dealing with "backsliding," as it would not apply in this situation.

"Backsliding" is a term that has been used to describe a circumstance where a facility has an NPDES permit that lists certain effluent limitations and upon renewal/reissue of the permit, the "new" effluent limitations are made less stringent than those in the previous permit. In general, "backsliding" is not allowed. The regulations that discuss "backsliding" are found at 40 CFR 122.44(l). These regulations discuss the renewal or reissue of NPDES permits (for direct dischargers) and say that the effluent limitations, standards, or conditions in the renewed/reissued permit "must be at least as stringent" as the effluent limitations, standards, or conditions in the previous permit. The regulations do provide several exemptions which would allow "backsliding" (e.g., circumstances have materially and substantially changed since the time the permit was issued).

However, EPA believes that the regulations of 40 CFR 122.44(l) ("backsliding") do not apply to the situation where a PFPR facility switches from zero discharge to the P2 alternative at the time of permit renewal. This is because EPA designed the zero discharge and P2 alternative limitations of the PFPR effluent guidelines (40 CFR 455.40) to be equivalent. Therefore, the P2 alternative is not only "at least as stringent" as zero discharge, but it is just as stringent.

At first it may seem counter intuitive that some wastewater discharge, even a very small amount, is just as stringent as zero discharge. However, as discussed in the PFPR effluent guidelines preamble to the final rule (61 FR 57518; November 6, 1996), EPA believes that when considering the potential cross-media impacts associated with zero discharge (e.g., impacts to air from contract hauling for off-site incineration of dilute, low-BTU-value, wastewaters), the P2 alternative may be more protective of the environment overall.

## Necessary Paperwork

**Are facilities required to complete the P2 audit tables (Tables A through C) and Tables D and E for compliance documentation?**

No, facilities are not required to complete these tables. They are provided as a tool. However, if a facility chooses to complete them, they can be used to meet some of the paperwork requirements (see Chapters 4, 6, and 7 of this manual for more detail).

**Who is the entity that conducts a P2 audit and regulates a facility?**

The control authority (for indirect dischargers) or the permitting authority (for direct dischargers) enforces the PFPR rule. The P2 audit is one way of determining compliance with the rule; however, the P2 audit is not required by the rule. The P2 audit was designed as a tool for the facilities, control/permitting authorities, consultants, etc. to help organize the various pieces of information that will aid in making compliance decisions. A control authority/permitting authority may ask a facility to conduct such an audit, or may conduct the audit themselves. The P2 audit tables were designed so that they could be used as part of the compliance paperwork, but they are not required.

**Who receives the initial certification?**

The control authority/permitting authority receives the certification from facilities that choose the P2 alternative and that discharge or have the potential to discharge.

**Under the General Pretreatment Program (40 CFR 403), certain sampling and analysis is required to be defensible (for enforcement procedures). How does that affect the analysis that would be conducted for the PFPR rule?**

40 CFR 403.8(f)(2)(vi) requires the POTW to take care and establish procedures so that sampling data and analysis can be admissible in enforcement procedures. However, Part 403.12(g) requires that Industrial User (IU) sampling must be appropriate/representative and in accordance with 40 CFR 136. Therefore, Part 403 does not require IU sampling to be defensible in enforcement procedures. This means that the sampling performed by the IU for purposes of this rule (e.g., for collecting data to demonstrate that the wastewater treatment system is "well operated and maintained") must be appropriate and representative. However, other state or local regulations may also apply.

**What kind of compliance paperwork is required for zero dischargers, including facilities that do not generate wastewater and facilities that totally reuse all wastewater generated?**

If the facility does not have a “potential to discharge,” such as facilities that do not generate wastewater, they are not covered by the scope of the regulation; however, a facility may want to send a letter or certification statement to their POTW/control authority stating that they have “no potential to discharge.”

If the facility does have the “potential to discharge,” even if they are not actively discharging (which may be the case with facilities that totally reuse wastewater), the facility needs to complete a BMR. For the monitoring requirements portion of the BMR, they should indicate that they will be achieving zero discharge, and therefore, there is nothing to monitor.

If the facility is complying with zero discharge by demonstrating “nondetects” of pesticide active ingredients and priority pollutants, the BMR should contain monitoring data for the priority pollutants, as well as a list of the pesticide active ingredients expected to be used in production in the next 12 months.

**According to the Section 403 regulations, paperwork must be kept on site for 3 years. How long must on-site compliance paperwork for the PFPR rule be kept?**

PFPR facilities complying with the P2 alternative must keep the compliance paperwork necessary to document their current activities. In addition, facilities must keep “old” paperwork for the three-year minimum discussed in 40 CFR 403.12(o).

**For on-site compliance paperwork, may a facility cross-reference other records at the facility, or does a separate copy of those records need to exist in their PFPR compliance file?**

Facilities may cross-reference records in other parts of the facility (e.g., production records), but must be able to produce those records when requested by their permitting or control authority.

**For the initial certification statement, do facilities need to use the certification statement listed in Section 403.6(a)(2)(ii)? Can the same manager who certifies under Section 403 also certify under the PFPR rule?**

Facilities may use the following certification statement listed in Section 403, but they are not required to use that exact wording for compliance with the PFPR rule:

“I certify under penalty of law that this document and all attachments were prepared under my direction of supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.”

Most importantly, the “responsible corporate official” (or general partner or proprietor or duly authorized official), as de-

fined in Section 403.12(l), must certify that the information is true and accurate.

The Initial and Periodic certification statements of the PFPR rule have the same signatory requirements as those listed in Section 403.12(l) of the General Pretreatment Regulations:

(l) *Signatory requirements for industrial user reports.* The reports required . . . shall be signed as follows:

(1) By a responsible corporate officer, if the Industrial User submitting the reports required...is a corporation. For the purpose of this paragraph, a responsible corporate officer means (i) a president, secretary, treasurer, or vice-president of the corporation in charge of a principal business function, or any other person who performs similar policy or decision-making functions for the corporation, or (ii) the manager of one or more manufacturing, production, or operation facilities employing more than 250 persons or having gross annual sales or expenditures exceeding \$25 million (in second-quarter 1980 dollars), if authority to sign documents has been assigned or delegated to the manager in accordance with corporate procedures.

(2) By a general partner or proprietor if the Industrial User submitting the reports required . . . is a partnership or sole proprietorship, respectively.

(3) By a duly authorized representative of the individual designated in paragraph (l)(1) or (l)(2) of this section if:

(i) The authorization is made in writing by the individual described in paragraph (l)(1) or (l)(2);

(ii) The authorization specifies either an individual or a position having responsibility for the overall operation of the facility from which the Industrial Discharge originates, such as the position of plant manager, operator of a well, or well field superintendent, or a position of equivalent responsibility, or having overall responsibility for environmental matters for the company; and

(iii) the written authorization is submitted to the Control Authority.

(4) If an authorization under paragraph (l)(3) of this section is no longer accurate because a different individual or position has responsibility for the overall operation of the facility, or overall responsibility for environmental matters for the company, a new authorization satisfying the requirements of paragraph (l)(3) of this section must be submitted to the Control Authority prior to or together with any reports to be signed by an authorized representative.



**If a facility certifies that no process wastewater pollutants will be detected in the effluent from their treatment, does that mean that the MDL is their compliance limitation? What if the facility certifies that their treatment system will result in an effluent below 10 g/L (or some other number)?**

**How is CBI that is included as part of compliance paperwork (either initial or periodic certification or other on-site compliance paperwork) handled? What can a facility claim as CBI? Will the confidentiality requirements described in 40 CFR 403 apply to on-site compliance paperwork required by the P2 alternative?**

**Can a facility claim both treatment system effluent and outfall effluent data CBI?**

**At times, facilities may be required to change to a new contract/toll formulator at a moment's notice due to unforeseen circumstances. Can a waiver be granted (from the local control authority) to the new contract/toll formulator for the 90-day notification?**

This responsible corporate official can be the same person for both Section 403 and 455 certifications. Note that the timing of submittal of the PFPR Periodic Certification Statement and the Part 403 periodic compliance reporting have been coordinated so that a facility can submit them to the POTW/control authority at the same time (and have them signed by the same person).

If the facility chooses to meet zero discharge, then the limitation is zero, not the method detection limit. However, the facility can demonstrate zero discharge by achieving no detection of process wastewater pollutants. If the method detection limit decreases over time, the facility would still need to show no detection of process wastewater pollutants.

If the facility wishes to achieve compliance by meeting a number (e.g., less than 10 g/L), then that facility can choose to comply with the P2 alternative.

The POTW/control authority is authorized to view CBI, but they must have procedures in place to protect CBI from unauthorized public access. POTWs and control authorities have to allow access to the public at least to the extent that the EPA confidentiality regulations allow public access. 40 CFR 403.8(f)(1)(vii) requires POTWs (with approved pretreatment programs) to implement legal authority that complies with 40 CFR 403.14. 40 CFR 403.14(b) and (c) require that effluent data not be considered confidential, and all other information must be made available to the extent required under 40 CFR 2.302. Most POTWs have an allowance in their local ordinances for confidentiality.

Any data associated with the "point of compliance" cannot be held as CBI. Therefore, it depends on the point of compliance, which should be explicitly listed in the permit. The point of compliance in many regulations is upstream from a commingled outfall.

If the new toll formulator is performing any in-scope PFPR operations, then they do not need to provide a 90-day notification; however, they would need to notify the control authority of the "change of discharge" [40 CFR 403.12(j)] and would indicate this change in their PFPR periodic certification paperwork.

If the new toll formulator does not currently perform any PFPR operations, the toll formulator may need to meet zero discharge (e.g., through off-site disposal or through sending wastewater back to the facility through which they are con-

tracting) or store the wastewater until a proper control mechanism is in place.

## Permit/Control Mechanism Issues

**How does the POTW/control authority regulate pollutants if one production line is achieving zero discharge and another production line is complying with the P2 alternative and they are only sampling the discharge four times per year?**

The final PFPR rule is different from other effluent guidelines and standards in that there is no set of limitations to meet for discharge. Therefore, the rule cannot be enforced by monitoring end-of-pipe pollutant concentrations. To ensure that the production line using the P2 alternative is complying with the rule, the control authority/permittee would need to tour the facility to determine that the P2 practices are in place and in use, that the treatment system is well operated and maintained, and that the paperwork is in place to document compliance.

**Is it up to the discharger whether or not they are a discharger (i.e., whether they choose to meet zero discharge versus the P2 alternative, what treatment they will perform, etc.)?**

These decisions are initially made by the discharger; however, approvals are needed/required by the control/permitting authority. Local jurisdiction can be more stringent, but not less stringent than the national guidelines and standards. Therefore, the final approach to complying with the PFPR rule is really up to both the discharger and the regulating authority. If the control authority does not respond to the discharger's compliance paperwork with an approval or a disapproval, the facility is still responsible for ensuring that they are in compliance with 40 CFR 455 Subcategory C requirements.

**In the end, does the permittee come up with a mass- or concentration-based limit?**

It is not necessary for the permittee to develop such a limit, although they may choose to do so if there are sufficient data and an appropriate analytical method for the specified pesticide active ingredient.

**How much flexibility does a control authority/permittee have to modify a practice?**

A control/permitting authority has the authority to use best professional judgement (BPJ) to modify any practice. In so doing, they should use the environmental hierarchy to promote pollution prevention practices first, followed by recycle/reuse, treatment, and finally disposal. In addition, the final rule enables permitting/control authorities to add or replace P2 practices specified in the rule with new or innovative practices that are more effective at reducing the pollutant loadings from a specific facility to the environment (see page 57526 of the preamble to the final rule in Appendix A).

**Does the PFPR rule give the criteria the control authority/permitting authority can/should use in modifying practices?**

As discussed in the answer to the previous question, the preamble to the final PFPR rule provides guidance to permittees/control authorities on the criteria for modifying P2 practices under the P2 alternative. See page 57526 of the preamble to the final rule in Appendix A.

**If the control authority or permitter is touring a facility and finds that the plant is obviously not following a specified Table 8 practice, is that cause for an enforcement action?**

If the facility has certified they are implementing a specific Table 8 practice, but the control authority or permitter observes that the practice is *not* being implemented or utilized, then this could be cause for an enforcement action. However, many PFPR facilities produce nonpesticide products on the same equipment as pesticide products. Therefore, the control authority/permitter should be sure that they are observing operations related to in-scope PFPR production before taking any action.

**How do control authorities/permitting authorities use Table 10?**

If a PFPR facility chooses the P2 alternative and generates wastewaters that require treatment prior to discharge following implementation of P2 practices, then the control/permitting authority can use Table 10 as one way to identify that the treatment being used is “appropriate.”

**How do treatment decisions work and how does a permit writer determine limits for PFPR/manufacturing facilities?**

If a PFPR/manufacturing facility chooses to comply with zero discharge, there is no allowance (“zero” allowance) given for pesticide active ingredients that they also manufacture (i.e., the limit is based solely on their manufacturing production). Non-manufactured pesticide active ingredients must not be detected in their effluent (i.e., the permit should specify zero discharge).

If the facility chooses to comply with the P2 alternative, the P2 practices would be included in the facility’s permit. The limitation for pesticide active ingredients that are also manufactured could be adjusted to include the facility’s PFPR production. If the pesticide active ingredient is not manufactured, that pesticide active ingredient would not require a specific limitation. See page 57528 of the preamble to the final rule in Appendix A for a detailed discussion of compliance for PFPR/manufacturers.

**In order for a control authority to give a waiver for floor wash or the final rinse of a triple rinse, first, the wastewater must be unable to be reused and, second, the pesticide active ingredients in the wastewater must be at levels too low to be effectively pretreated and that will not cause interference at the POTW. How does the control authority determine the second condition?**

Determining the levels at which the pesticide active ingredient is not effectively pretreated is based more on BPJ than on an objective number (e.g., the pesticide active ingredient concentration). EPA developed the waiver with the goal of providing some relief to facilities that were already implementing P2 practices by reusing all wastewater streams that were reusable, and that would otherwise have to build a treatment system to treat the inherently non-reusable wastewater streams (e.g., floor wash and a non-reusable final rinse of a triple rinse). Control authorities may look at a facility’s operations and determine that, if a facility has successfully implemented P2 practices, it can use the waiver to discharge whatever small amount of floor wash is left (after water conservation) or the final rinse of a triple rinse to the POTW when the volume of that final rinse exceeds the volume that is reusable.

**How can an enforcement agency determine if a treatment system is well operated and maintained?**

The determination of whether a treatment system is well operated and maintained will be based on the rationale and “method of demonstration” chosen by the facility and approved by the control/permitting authority. For example, if a facility chose an activated carbon adsorption treatment system based on treatability test data (including carbon saturation loading/carbon breakthrough curves) and used that data to establish a relationship between TOC and pesticide active ingredient concentrations, they might demonstrate that the system is well operated and maintained by monitoring TOC and documenting the frequency of carbon changeout. The enforcement agency would then be able to review the TOC data and carbon records to determine if the facility was complying with their method of demonstration.

**Does a POTW/control authority need to monitor specifically for pesticide active ingredients to ensure that a facility is complying with the PFPR rule?**

No, monitoring may not be economically feasible and there may not be analytical methods available for all pesticide active ingredients. Compliance with the P2 alternative may be shown through ensuring that P2 practices have been implemented, the appropriate treatment is in place and is well operated and maintained, and documentation has been prepared and is readily available at the facility.

If a facility chooses to comply with zero discharge through “no flow” of process wastewater, the POTW/control authority would mostly ensure compliance through facility inspection of the PFPR process areas. However, if a facility is complying with zero discharge by demonstrating non-detect levels of pesticide active ingredients and priority pollutants, analytical methods must exist and the POTW/control authority would monitor at a minimum for expected priority pollutants and those pesticide active ingredients used in PFPR production.

**For a POTW/control authority to set more stringent limitations, do they have to show some basis (e.g., evidence of pass through)? If not, can industry sue?**

POTWs/control authorities are required by Federal Regulations to develop local limits to protect against pass through and interference (40 CFR 403.5(c) and 403.8(f)(4)). This means the POTW/control authority must develop local limits that protect the treatment plant from pollutants that may upset the plant, pass through the plant untreated (or inadequately treated), may endanger the well being of workers, or would inhibit sludge management options. Some of these limitations may be more stringent than limitations found in national categorical standards. The basis for these limitations would not be the evidence of pass through or interference, but rather the potential for pass through or interference. The pretreatment regulations are designed to protect against pass through and interference rather than react to it.

**How is the control authority able to show compliance when there are no numeric limits?**

By ensuring that their categorical industrial users are maintaining their on-site compliance paperwork accurately, that the specified P2 practices have been implemented, and that the

**Under Section 403, the POTW is required to take a certain number of samples from the regulated facility. How do they complete this item when the facility is complying with the P2 alternative? What is the absolute minimum that the POTW must do to meet requirements for a control authority?**

**When is a PFPR facility not in compliance with the rule (i.e., how is noncompliance determined when numeric limits are not in the permit)?**

**Can EPA provide guidance to permit enforcement officials on allowing negotiation of a compliance plan without penalties?**

treatment systems are appropriate and have been demonstrated to be well operated and maintained.

The PFPR rule does not require monitoring for pesticide active ingredients. Therefore, the POTW would only need to monitor for their local limits. Note that if a POTW monitors their effluent for pesticide active ingredients at the point of discharge to the receiving stream, the contribution of pesticide active ingredients comes not only from PFPR facilities but also nonpoint source dischargers (e.g., agricultural runoff).

A facility is not in compliance if they are not implementing the P2 practices specified in Table 8, have not documented their justifications for modifications to those P2 practices, have not documented the equivalency of their treatment system to the list of “appropriate” technologies listed in Table 10, and are not able to demonstrate that the system is well operated and maintained based on the rationale discussed in their on-site compliance paperwork.

EPA’s Small Business Policy promotes environmental compliance by providing incentives, such as penalty waivers and penalty mitigation, to those small businesses that participate in on-site compliance assistance programs or conduct environmental audits to discover, disclose, and correct violations. A small business may be eligible under the Agency’s “Policy on Compliance Incentives For Small Businesses” to have all potential penalties for non-compliance waived if the companies agree to come into compliance and meet other criteria.

The policy applies to a person, corporation, partnership, or other organization that employs 100 or fewer individuals. EPA may eliminate its penalty against the small business if:

- the business receives on-site compliance assistance or conducts an environmental audit;
- the business identifies the violation(s) through the assistance or audit, and discloses it within 10 days (or such shorter period provided by law) to the appropriate government agencies;
- it is the first violation of the requirement in a three-year period and no environmental enforcement actions against the business have been taken in the last five years; the violation is corrected within 180 days after detection of the violation (or 360 days if pollution prevention is employed); and
- the violation has not caused actual serious harm, and does not pose a potentially imminent and substantial endangerment to the public or environment, does not involve criminal conduct, and did not result in a significant economic benefit.



For more information on the EPA's audit policies, please see the web site for EPA's Office of Enforcement and Compliance Assurance at <http://www.epa.gov/oeca/index.html>.

**As a PFPR facility, the flexibility of the rule to develop documentation in numerous ways is helpful. However, if an auditor finds a better or different P2 practice than what the facility has found, what action will EPA take? How will enforcement occur?**

Better or improved pollution prevention practices should not be the basis of an enforcement action. Enforcement actions related to the P2 practices would be more likely to be incurred if a P2 practice is listed in the control mechanism/permit and is not being performed. In the case of a new practice brought up by the control/permitting authority, the new P2 practice must be agreed upon by both the facility and the control/permitting authority and included in the permit/control mechanism. After that, if facility is not following the practices, then enforcement actions may be taken.

**Are there any RCRA issues associated with the practices mentioned (e.g., storage and reuse)?**

Yes. There is a discussion of RCRA issues on pages 57528 and 57529 of the preamble to the final rule (located in Appendix A).

**If treating wastewaters that are listed or characteristic wastes, is a RCRA permit required?**

If these wastewaters are treated in a treatment system covered by a Clean Water Act effluent guideline, the treatment system is exempted from needing a RCRA permit. However, this does not necessarily mean that the wastewater being treated is exempt from RCRA regulations.

**Do changes specified in the periodic certification require NPDES permits to be reopened?**

The method in which changes are incorporated into NPDES permits may vary depending on the locality, state, or region in which the facility is located; however, it may be possible to set up the permit to specify that the P2 practices and appropriate treatment requirements for the PFPR rule are located in an approved plan, as is done with spill control plans. This method may allow changes in practices or treatment to be incorporated without reopening the whole permit.

**How does a facility determine what to put in the permit for operation of the treatment system if the volume and characteristics of the water changes over time?**

If a facility adds new production, they may need to reevaluate what treatment is appropriate for their PFPR wastewater sources. When initially determining treatment requirements, the facility should keep in mind that most PFPR facilities (after implementing P2 practices) generate volumes of wastewater small enough to store and treat periodically. Therefore, even though there may be a large variation in daily or weekly wastewater characteristics, it is more likely that wastewater treated periodically (e.g., one time per quarter) will be more consistent from one treatment batch to the next. In addition, a facility may find it most useful to evaluate a long-term plan of present and future production.

Over time, the facility will need to demonstrate that the system is well operated and maintained for their changing wastewater



by keeping logs/records of the volumes and characteristics of their wastewater.

**Does the P2 alternative override or make a current discharge permit obsolete?**

Facilities that directly discharge wastewater will incorporate the requirements of the PFPR rule (either zero discharge and/or the P2 alternative) at the time their permit is issued, reissued, or renewed.

Facilities that indirectly discharge wastewater and choose to comply with the P2 alternative will have a new permit/control mechanism put in place prior to the compliance deadline of November 6, 1999. This permit/control mechanism can still include aspects of previous permits, as well as additional local limitations, as long as it incorporates the information necessary for complying with the P2 alternative.

## **Potential to Discharge (see also Zero Discharge)**

**What will a permit for a zero discharge/no-flow PFPR facility look like?**

Facilities with no potential for discharge are not covered under the PFPR categorical standards. For facilities that achieve zero discharge, but have the potential to discharge, the permit would most likely only require a certification statement that the facility is at zero discharge. It may also list inspections that the facility would undergo.

A facility may comply with zero discharge by demonstrating that all pesticide active ingredients and priority pollutants are below their method detection limits in the facility's final effluent, and only if all pollutants have approved analytical methods. A detection of any of these pollutants means the facility is out of compliance with the rule.

**When determining whether a facility has a "potential to discharge," how are sanitary hookups viewed? For example, what if a worker dumps a bucket of floor wash into a toilet?**

The potential to discharge only includes regulated wastewater sources. Sanitary water, as well as employee shower and laundry water, are not regulated wastewater sources under the PFPR rule. Therefore, a facility could have a sanitary hookup and still be considered as having "no potential to discharge" regulated wastewater. If a facility is concerned that their employees may discharge regulated wastewater sources through a sanitary hookup, they may want to establish a training program, including standard operating procedures (SOPs) to cover the management of wastes at their site.

**Who determines whether a facility has the "potential to discharge"?**

The facility is not covered under the scope of the rule, but may want to notify their control/permitting authority and/or submit a certification stating that they have "no potential to discharge" regulated PFPR wastewater sources. This certification would be submitted to (and approved by) the control/permitting authority following inspection.

## Compliance Time Line

**When do facilities have to start certifying their operations (i.e., now versus November 6, 1999)?**

Existing indirect dischargers (i.e., those facilities that discharge to a POTW) must determine a specific compliance schedule with their POTW/control authority. This schedule must include milestones that lead to compliance with the rule *no later than* November 6, 1999.

Existing direct dischargers (i.e., those facilities that discharge directly to a river or receiving stream) must be in compliance at the time of issuance, renewal, or modification of their existing NPDES permit.

New sources must be in compliance with the PFPR rule at the commencement of discharge.

**If a new indirect discharging facility comes into being in 1998, do they have until November 6, 1999 to come into compliance with the rule? If not, why not?**

A new indirect source (any PFPR facility that meets the definition of new source in 40 CFR 403.3(k) as of April 14, 1994) must come into compliance when they begin discharging. New sources were given the opportunity to plan for requirements of the final rule (new source determination is made based on the proposed rule date). Existing indirect sources were already operating prior to the proposed rule and therefore could not plan the design of their facilities to meet the final regulation (this is especially true in the case of an effluent guideline where standards are more stringent for new sources). NOTE: The pretreatment standards are equal for existing and new sources under the final PFPR rule.

40 CFR 403.6(b) is the citation that explains the difference between new and existing sources - "(b) *Deadline for Compliance with Categorical Standards*. Compliance by existing sources with categorical Pretreatment Standards shall be within 3 years of the date the Standard is effective unless a shorter compliance time is specified in the appropriate subpart of 40 CFR chapter I, subchapter N....Existing sources which become Industrial Users subsequent to promulgation of an applicable categorical Pretreatment Standard shall be considered existing Industrial Users except where such sources meet the definition of a New Source as defined in § 403.3(k). New Sources shall install and have in operating condition, and shall "start-up" all pollution control equipment required to meet applicable Pretreatment Standards before beginning to Discharge. Within the shortest feasible time (not to exceed 90 days), New Sources must meet all applicable Pretreatment Standards."

**If an indirect discharging facility is interested in entering the PFPR market in the next 1-2 years, what steps should that facility take before production begins and after production begins?**

New sources must complete a BMR 90 days prior to discharge and must be in compliance with the PFPR pretreatment standards (PSNS) at the commencement of discharge. This means the facility must submit their initial certification statement (or certify that they achieve zero discharge) to the control authority and have their on-site compliance paperwork completed. Ninety days following commencement of discharge, the facil-

ity must complete their 90-day compliance report. If the facility chooses the P2 alternative, they will also need to complete their periodic certification statement in June and December of each year.

If the facility is *not* a new source, the facility will have to be in compliance with the PFPR regulation by November 6, 1999. At this point, the BMR (which was due by July 7, 1997) and the initial certification statement must be submitted and the on-site paperwork completed. Ninety days following commencement of discharge, the facility must complete their 90-day compliance report. If the facility chooses the P2 alternative, they will also need to complete their periodic certification statement in June and December of each year.

**After November 6, 1999, when are facilities (new sources) required to submit their initial certification?**

At the time of permit issuance prior to discharge.

**Is any paperwork required between now and November 6, 1999 for indirect dischargers?**

In addition to submitting the BMR, if a facility is not in compliance at the time they submit the BMR, then they must develop a compliance schedule with milestones with their control authority. The facility would need to show they are meeting each milestone on their way to full compliance.

**When does the BMR get submitted? Is it after the permit has been issued and after decisions have been made on treatability for the wastewater to be discharged?**

No. For indirect dischargers, it is prior to the initial certification. The BMR is the first piece of compliance paperwork required and is submitted well ahead of choosing wastewater treatment technologies. The BMR is supposed to reflect current operations, not necessarily compliance levels. The BMR was due on July 7, 1997 for existing indirect dischargers.

**Why aren't facilities required to submit their initial certification at the time the BMR is due?**

Initial certifications are due *no later than* November 6, 1999, although they may be submitted earlier. The BMR measures the baseline performance of the facility, but the initial certification cannot be made until the facility has invested time (and often money) to gather the information needed to make the compliance decisions (i.e., zero discharge or P2 alternative) that are documented in the initial certification.

**How does the November 6, 1999 date apply to facilities that either choose to achieve zero discharge or already achieve zero discharge?**

Indirect dischargers would need to be achieving zero discharge by November 6, 1999 for those wastewater sources for which they chose zero discharge in the initial certification statement. If the facility is already meeting zero discharge, then they would not need to set up the 90-day compliance schedule with milestones discussed in 40 CFR 403.

Direct dischargers must be in compliance at the time of issuance, reissuance, or modification of their NPDES permit.

**Do all facilities within the scope of the PFPR rule have to meet zero discharge by the November 6, 1999 compliance date?**

No. Existing indirect discharging facilities have to be in compliance with *either* zero discharge or the P2 alternative on a source by source basis *no later than* November 6, 1999. Existing direct dischargers must be in compliance at the time of issuance, reissuance, or modification of their NPDES permit.

**Should initial certification paperwork be completed *before* installing full-scale treatment?**

Indirect dischargers must set up a compliance schedule with their POTW or control authority that specifies milestones to be achieved to assure compliance by November 6, 1999, including the installation and operation of any necessary treatment required prior to discharge. The initial certification paperwork must be completed by or before the compliance deadline.

Direct dischargers must complete the initial certification paperwork by the time of permit issuance, reissuance, or renewal.

**Does the 3-year compliance date of November 6, 1999 apply to facilities choosing the P2 alternative (i.e., do they have until November 6, 1999 to install treatment systems)?**

The 3-year compliance date only applies to indirect dischargers and this is the date at which they must be *in compliance* with the rule. If the facility wishes to be discharging wastewater at that time and treatment of that wastewater is necessary for compliance, the appropriate treatment system would need to be installed, tested, and a procedure for determining that it is well operated and maintained determined. Indirect dischargers must establish milestones with their control authority that the facility must meet to achieve compliance with the rule by November 6, 1999.

**Does the treatment system have to be fully tested and operational at the time the initial certification statement is submitted?**

Indirect dischargers must set up milestones for achieving compliance with the PFPR rule by November 6, 1999; therefore, it is possible that the treatment system may be tested following submission of the initial certification statement. However, the system must be fully operational by the agreed date of compliance or November 6, 1999, whichever is earlier.

Direct dischargers may also submit the initial certification statement before the issue, reissue, or renewal of their permit is complete. In such a situation, the treatment system may not yet be fully operational.

**When is a facility allowed to discharge after selecting a compliance option?**

If a facility is not currently discharging PFPR wastewater, they may begin discharging wastewater under the terms of their permit/control mechanism as soon as their permit/control mechanism is in place.

**Must the control/permitting authority approve the P2 practices and modifications before they are implemented?**

If the P2 practice and modification are listed in Table 8 to Part 455, then the control/permitting authority does not need to give prior approval; however, they do have the right to ensure that the proper backup documentation is present at the facility to justify the modification and to ensure that local limitations are being complied with.

**When is the periodic certification required, now or after November 6, 1999?**

If the P2 practice and modification are not listed in Table 8, the control/permitting authority does need to approve the practice with modification prior to discharge.

**If a customer asks a facility to begin making a new product, when must the control authority be notified and when can discharge begin?**

The periodic certification requirement begins after the facility has submitted their initial certification and is required twice per year for indirect dischargers and once per year for direct dischargers. The timing of submittal can be coordinated with the submittal of compliance paperwork required by the General Pretreatment Regulations or the NPDES regulations.

The facility must notify their control/permitting authority if a change in discharge is occurring, implement the appropriate P2 practices, update their treatment system to include the appropriate or equivalent treatment if new pesticide active ingredients exist in the wastewater to be treated, and receive approval before discharging wastewater associated with the new product. A facility is allowed to begin production at any time; however, they may need to store the generated wastewater until discharge approval is received.

## Other Questions

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**The Section 403 regulations were revised to change the language from a “pretreatment agreement” to “control mechanism” because of concerns regarding the legal implications of that language. The PFPR regulations seem to be adding the pretreatment agreement language back in. Why are the two regulations inconsistent?**

The term “pretreatment agreement” in the PFPR regulation was not used intentionally; it is intended to be a synonym for an individual control mechanism or permit.

**Is there any way the government can track the commodity chemicals used in pesticide products by PFPR and pesticide manufacturing facilities?**

Facilities are required to submit Confidential Statements of Formula (CSFs) to EPA, which include the specific “recipe” for the product registered; however, these recipes are typically considered confidential business information (CBI) under FIFRA.

Also, facilities are required to report emissions of toxic chemicals under the SARA Section 313 program (i.e., the Toxic Release Inventory program). However, PFPR facilities often do not use toxic chemicals in the amounts necessary to trigger reporting under this program, although some pesticide manufacturers do.

**How did EPA come to the conclusion that facilities would store wastewater and treat it quarterly?**

A storage period of 90 days or longer prior to treatment is not uncommon in this industry, based on information EPA gathered during site visits. EPA originally evaluated batch treatment of PFPR wastewater on a quarterly basis because of possible RCRA requirements that might be applicable if wastewater was stored for more than 90 days on site (or 180 days for small quantity generators). EPA determined that, under the P2 alternative, wastewater stored for more than 90 days prior to reuse would not need a RCRA storage permit if it was hazardous. Most interior rinsates are expected to be reused and/or be non-RCRA hazardous. See page 57529 of the preamble to the final rule in Appendix A for more detail.

When facilities are treating RCRA-hazardous wastewaters prior to discharge, the 90-day limit for large quantity generators (and the 180-day limit for small quantity generators) still applies. In addition, EPA believes that facilities will wish to limit the length of time that wastewater is stored prior to treatment even when non-hazardous.

**Was toxicity testing considered in lieu of the P2 alternative?**

No, the Clean Water Act requires effluent limitations guidelines and standards to be technology-based, not risk-based. However, toxicity-testing may be used in combination with the P2 alternative to provide a surrogate measure for demonstrating that the treatment system is well operated and maintained.

**Will the P2 Guidance Manual be available on the Internet?**

Yes. The Guidance Manual can be found on EPA's Effluent Guidelines web site (<http://www.epa.gov/OST/guide>) under the Pesticide Formulating, Packaging, and Repackaging Industry.

**Is there a place where treatability data could be logged or collated so all facilities can utilize the results?**

At this time, there is no specific clearinghouse for information on PFPR treatment technologies or treatability data. However, interested parties can check into other EPA clearinghouses or databases on the Internet via the EPA Homepage: <http://www.epa.gov>.

**How do we determine the CAS numbers of the pesticide active ingredients listed on Table 10?**

EPA has included a table in Appendix C that lists pesticide active ingredients from Table 10 with their corresponding Shaughnessey codes and CAS numbers.